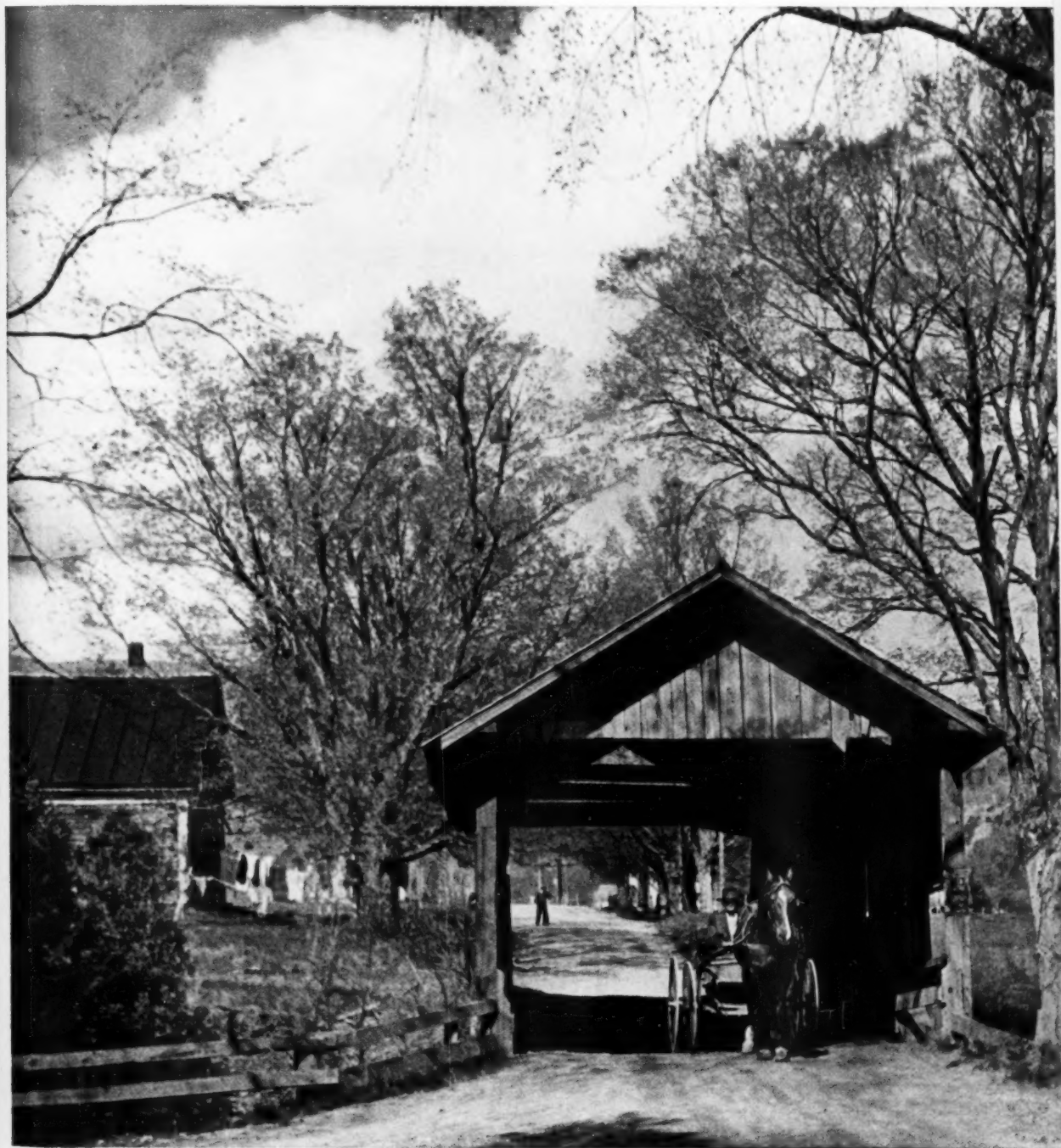


American **FORESTS**

The Magazine of Forests, Soil, Water, Wildlife, and Outdoor Recreation

APRIL 1959

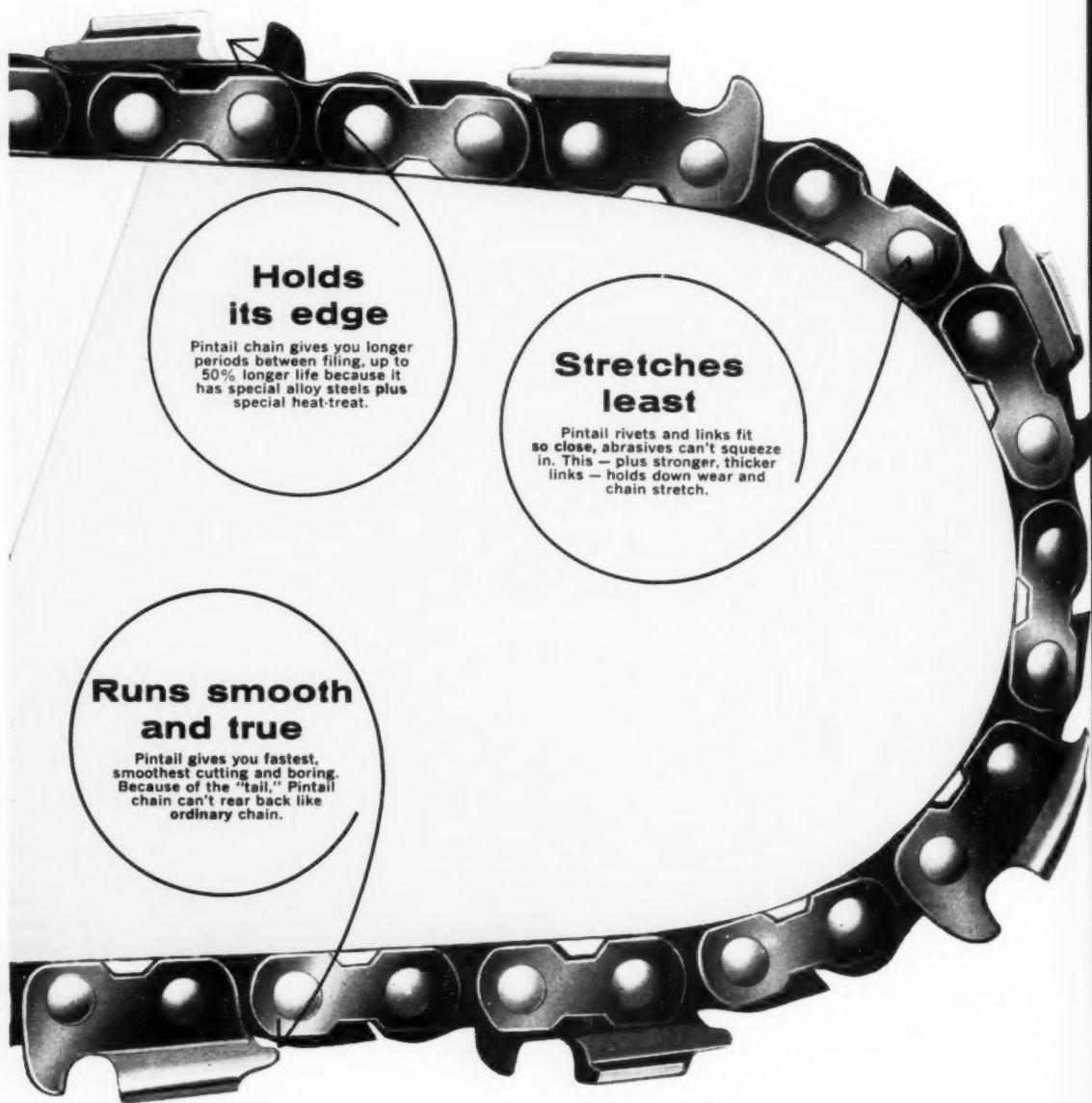
50 CENTS



APRIL—Month of Firsts • BY JESSE STUART • Page 20

PINTAIL

Toughest chain in the woods!



Holds its edge

Pintail chain gives you longer periods between filing, up to 50% longer life because it has special alloy steels plus special heat-treat.

Stretches least

Pintail rivets and links fit so close, abrasives can't squeeze in. This — plus stronger, thicker links — holds down wear and chain stretch.

Runs smooth and true

Pintail gives you fastest, smoothest cutting and boring. Because of the "tail," Pintail chain can't rear back like ordinary chain.

Have you tried Pintail chain? You'll get more speed and less cost. Pintail fits all McCulloch saws, and most others, too. See your nearest McCulloch dealer. **The Pintail Tells the Tale**

McCULLOCH

5-8100

McCulloch Corporation, Los Angeles, California • Marine Products Division, Minneapolis, Minnesota • McCulloch of Canada, Ltd., Toronto, Ontario

PILE UP PROFITS

with

McCULLOCH

professional-quality chain saws

Whether you cut big timber or pulpwood, McCulloch has the saw you need to stack up more blue chips. Here's why:

POWER

McCulloch gives you more horsepower than ever before. Whether you want direct-drive for light-touch cutting—or gear-drive for maximum lugging power — McCulloch has the right saw to do the job.

DEPENDABILITY

Advanced engineering and precision manufacturing keep McCulloch chain saws cutting, tree after tree after tree.

PINTAIL CHAIN

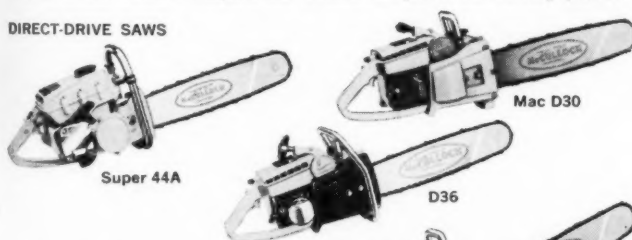
Only McCulloch gives you tough, new PINTAIL Chain...a masterpiece of engineering...designed to give you longer cutting periods between filing; least stretching; smoothest cutting and boring.

OPERATOR-DESIGNED

A chain saw is as good as the man behind it. That's why McCulloch makes all its saws with the operator in mind. Light weight (as low as 17 pounds), balanced power, anti-bark muffler are just a few reasons why McCulloch saws are easier to operate.

Only McCulloch offers a complete line of saws and prices start at only \$149.95

DIRECT-DRIVE SAWS



GEAR-DRIVE SAWS



See your McCulloch dealer for a demonstration. For complete literature and prices, write: McCulloch Corporation, Los Angeles 45, Calif.

"You're in luck when you've got a McCulloch Chain Saw"



Forester Diplomats Urged

A MOVEMENT to install forestry attachés in American embassies in foreign countries similar to the innovation in the German Embassy in this country was broached on March 19 by the Washington Section of the Society of American Foresters. That was the upshot of a meeting on the subject "The Role of U. S. Foresters in World Forestry" chaired by Dr. I. V. Harper, chairman of the executive committee of the Fifth World Forestry Congress in 1960. Foresters present enthusiastically hailed the proposal and started laying plans to put it into effect. The German experiment has been a success, foresters agreed.

The forestry attaché idea was promulgated following a panel discussion by experts in foreign forestry who all agreed that many foreign countries need the high standards of personal performance, practicality, and knowledge of the value of teamwork that American foresters bring to all projects. These are contributions American forestry can make to foreign forestry in addition to technical competence, Dr. I. T. Haig, chairman of the Organizing Committee for the 1960 congress, told the group.

A. C. Shaw, vice president of the Champion Paper and Fibre Company, of Hamilton, Ohio, and a student of Latin America for 11 years, said that Latin American countries want the industry that can hike their standards of living, but productivity per person is low and many of the people are not exactly free-enterprise minded. The red flag flies on far too many pronouncements from Latin American countries, Shaw said bluntly. News to most of the foresters present was the fact that Champion conducts its own foreign relations school for personnel going out of the country "to avoid the blunders that have been made before." This is a very costly business whether done by industry or the government, Mr. Shaw stressed.

Other experts on the panel were Paul Bedard, of ICA, Tom Gill, of the Pack Forestry Foundation, and A. C. Cline, in charge of foreign forestry for the U. S. Forest Service.

CHAIN SAWS

AFA OFFICERS

Don P. Johnston • *President*
 Edward P. Stamm • *Vice-President*
 John M. Christie • *Treasurer*
 Fred E. Hornaday • *Executive Vice-President*
 Kenneth B. Pomeroy • *Chief Forester*
 James B. Craig • *Secretary*
 Ovid Butler • *Exec. Director Emeritus*

BOARD OF DIRECTORS

Wilson Compton, 1959 — Virginia, Chairman of the Board, Cameron Machine Company.
 Charles A. Connaughton, 1961 — California Regional Forester, U. S. Forest Service.
 George L. Drake, 1961 — Washington, Consulting Forester.
 Albert Ernest, 1959 — Florida, Vice-President, St. Regis Paper Company.
 Stanley G. Fontanna, 1960 — Michigan, School of Natural Resources, University of Michigan.
 Karl T. Frederick, 1961 — New York, Chairman, New York State Conservation Council.
 Mrs. Katharine Jackson Lee, 1960 — New Hampshire, Connecticut River Watershed Council, Inc.
 Henry T. McKnight, 1961 — Minnesota, Chairman, Keep Minnesota Green Committee.
 George Wall Merck, 1959 — New Jersey, New York Zoological Society.
 DeWitt Nelson, 1961 — California, Director of Natural Resources.
 Richard J. Preston, Jr., 1960 — North Carolina, N. C. State College of Forestry.
 Carl F. Rehnberg, 1959 — California, President, Foundation for American Resource Management.
 H. B. Shepard, 1960 — Massachusetts, Consulting Forester.
 Philip W. Smith, 1960 — Pennsylvania, Dairy Farmer.
 James J. Storrow, 1959 — New Hampshire, Vice-President, New England Forestry Foundation.
REGIONAL VICE PRESIDENTS
Southern: Vertrees Young, Louisiana. Gaylord Container Corporation.
Northeastern: Lloyd E. Partain, Pennsylvania. The Curtis Publishing Company.
Southeastern: X. L. Pellicer, Florida. Vice-President, The St. Augustine National Bank.
Western: W. S. Rosecrans, California.
Central: G. B. Bonfield, Michigan. Vice-President, American Box Board Company.

HONORARY VICE PRESIDENTS

Mrs. Harold Christensen, Utah
 Walter J. Damtoft, North Carolina
 Samuel T. Dana, Michigan
 Paul M. Dunn, New Jersey
 T. W. Earle, Georgia
 Nolen J. Fuqua, Oklahoma
 George A. Garratt, Connecticut
 Maurice K. Goddard, Pennsylvania
 Frank B. Hubachek, Illinois
 Nils B. Hult, Oregon
 Eldon L. Johnson, New Hampshire
 Preston B. Kavanagh, District of Columbia
 Harley Langdale, Jr., Georgia
 R. Vance Miles, Jr., Alabama
 Bernard L. Orell, Washington
 Arthur N. Pack, Arizona
 Ted S. Pettit, New Jersey
 John W. Squires, Mississippi
 Mrs. Thomas H. Waller, New York
 George O. White, Missouri
 Harold G. Wilm, New York

American FORESTS

PUBLISHED BY THE AMERICAN FORESTRY ASSOCIATION

James B. Craig
Editor

Betty Kindleberger
Assistant Editor

James J. Fisher
Art Director

Volume 65, No. 4 | April, 1959

CONTENTS

- 6 FORESTER'S NOTEBOOK • Kenneth B. Pomeroy
- 7 TWO BIG "BREAKTHROUGHS" • James B. Craig
- 9 WASHINGTON LOOKOUT • Albert G. Hall
- 11 EDITORIAL — Congratulations, Mr. Benson
- 12 RESOURCE MANAGEMENT: A BASE FOR FREEDOM • J. A. Hall
- 17 A CHILDREN'S FOREST • E. J. Lever
- 18 TO THE WOODS FOR DELINQUENT BOYS • Robert R. Bowers
- 20 APRIL — MONTH OF FIRSTS • Jesse Stuart
- 22 FACING UP TO OUR WATER PROBLEM • S. L. Frost
- 24 "I MUST SAY . . ." • James B. Craig
- 27 READING ABOUT RESOURCES • Monroe Bush
- 28 THE CRISIS IN OUTDOOR RECREATION (PART II) • Marion Clawson
- 36 OPERATION FISH POND • Daniel Poole
- 38 LITTLE OAKS FROM BIG ACORNS • Jack B. Kemmerer
- 40 INTERIOR AWARD FOR AFA

COVER • Photograph was taken by Les Smith, and is printed through the courtesy of Vermont Life.



The AFA

The American Forestry Association, publishers of *American Forests*, is a national organization — independent and non-political in character — for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and the part they play in the social and economic life of the nation. Created in 1875, it is the oldest national forest conservation organization in America.

AMERICAN FORESTS is published monthly by The American Forestry Association at 919 Seventeenth Street, N. W., Washington 6, D. C. Subscription price \$6 a year. Editors are not responsible for loss or injury of manuscripts and photographs while in their possession or in transit. The Editors are not responsible for views expressed in signed articles. Second-class postage paid at Washington, D. C., and at additional mailing offices. Copyright, 1959, by The American Forestry Association.

To
Production
on any show

up

IT'S THE NEW, RUGGED EIMCO 146 LOG LOADER

LOOK AT THOSE SPECIFICATIONS:

Length Forks Down	19'-6 1/2"
Ground Clearance	11"
Height — Not Including Logging Canopy	9'-2"
Dumping Angle (at any position)	70°
Tilt Back Angle (at any position)	20°
Maximum Lift	14'-6"
Reach Full Lift (fork flat)	7'-3"
Reach Full Lift (fork tilted down)	3'-6"
Maximum Reach at 8 Ft. Lift	10'-0"
Maximum Opening of Forks	7'-0"
Maximum Log with Full Grip	54"
Minimum Log with Full Grip	24"
Maximum Reach Below Ground Level-Fork Tilted 70° ..	6'-0"
Track Gauge	74"
Overall Width of Tractor	94"
Overall Width Log Forks	92 1/2"
Total Weight (with CTWT*)	50,000 lbs. (less canopy)
Time to Hoist Full Height	10.0 secs.
Time to Open Clamps Full Stroke	5.0 secs.
Time to Dump Forks Full Stroke	3.5 secs.
Max. Load at Ground (with CTWT*)	25,000 lbs.
Max. Load at Full Height (with CTWT*)	15,000 lbs.

* Counterweight Standard Equipment.
* Will Increase with Winch or Other Attachments.


FOR INFORMATION CONTACT

THE EIMCO CORPORATION • SALT LAKE CITY, UTAH

EXPORT OFFICE, 81-82 SOUTH STREET, NEW YORK, N. Y.

BRANCHES AND DEALERS IN PRINCIPAL CITIES THROUGHOUT THE WORLD





Forest Forum

New Park Favored

EDITOR:

The article by C. J. Olsen in your February 1959 issue ("The Proposed Invasion at Mt. Wheeler") contains mistakes of fact and misleading implications. The White Pine Chamber of Commerce and Mines and the Nevada State Board of Economic Development have considered the true facts of the points raised and have concluded that, even as to economics (the article's strongest point), the advantage lies with the park.

The article speaks of "highly valuable and critically needed resources." First mentioned is "an estimated 3,000,000 feet of merchantable timber," and the article carries a photograph of a sawmill which "uses logs" from the proposed park—no longer true. The Forest Service has not for some years allowed any timber to be cut in this national forest and no longer considers the area to contain "merchantable timber." Even if there are 3,000,000 feet of timber, as there may be, scattered over 220,000 acres of rugged and largely inaccessible mountain country, would that small amount of timber pay even its own cost of "harvesting?"

The article speaks of mineral resources and says "260 acres are covered by patented claims and nearly 1,200 acres more by valid unpatented claims." It would probably be difficult to find a mountain area of 220,000 acres in Nevada which does not contain more than 1,460 acres of mining claims,

but in weighing the meaningful truth it is more important to realize that there is now no mineral production at all from the area proposed for Great Basin National Park.

It is true there is grazing by cattle and sheep on the proposed park area, grazing which would be allowed under national park policy to continue for the lifetime of the present permit holders. This grazing is by no means as important, however, as the article suggests, since the figures given of 400 cattle and 4,000 sheep apply only if the entire national forest section becomes park, which is not expected; and in any event the cattle graze on the proposed park only $2\frac{1}{2}$ to 3 months a year and the sheep an even shorter time, many of them only ten days a year.

This rather small livestock production is all of the "highly valuable and critically needed resources" capable of meeting the test of existing fact.

We must also, unhappily, take issue with a statement the author chooses to italicize, near the end of the article: "My whole argument up to this point amounts to this: *The special resources which the national park system is designed most expressly to protect, make available, and preserve, are already being made available, protected and conserved.*" While Mr. Olsen was undoubtedly sincere when he wrote the statement, it is not now entirely true, for on February 13 this year the regional office of the Forest Service at Ogden, Utah, announced plans

for exploitation of the Wheeler Peak area, including these words: "Resorts, cabin camps, summer homes, commercial enterprises will be permitted"—within the area proposed for a national park. Allowing summer homes, for example, in rare scenic areas is hardly protecting "the interests of John and Jane Citizen, whether of Nevada, Michigan, or elsewhere," to use Mr. Olsen's words.

We go along with Mr. Olsen in defending multiple use of public lands "except in extraordinary situations"—"to protect and preserve areas of remarkable scenic and scientific values." We maintain, however, on the basis of study by natural scientists and park authorities, both in and out of the federal government, that scenic and scientific values of genuine national park caliber do, in fact, abound in the Wheeler Peak area, and that an "extraordinary situation" does exist here.

Despite Mr. Olsen's "long-standing, intimate, and fond acquaintance with the area itself," we find there are basic facts about it of which he is not aware, facts generally discovered since he was here. For example, his words: "On the north face of Wheeler Peak is a deep cirque holding a permanent snow field or névé, highly valuable as a water resource, but technically a névé, rather than a glacier as some enthusiasts have advertised it and supposed it to be." Study within the last few years, by University of Nevada scientists and others, has refuted those words, and the Forest Service in the announcement of the Wheeler Peak Scenic Area designation on February 13 this year named as one of seven outstanding features: "Matthes Glacier which is the only known glacier in the Great Basin area."

Mr. Olsen seems unaware of the remarkable stands of immense and ancient bristlecone pines (oldest living things) recently found high in the Wheeler area and said by an investigating ecologist to be, in themselves, ample justification for Great Basin National Park. These amazing pines, too, were recognized in the recent Forest Service announcement, along with other remarkable features which Mr. Olsen does not mention.

There would be little use in a long semantic argument in answer to the series of paragraphs in which the author tries to maintain that the Wheeler Peak area can't be "unique" simply because it is "typical of the vast desert region between the Rockies and the California Sierra Nevada. . . ." It seems quite clear now that the area is qualified for national park status because it is the superb example of high Great Basin country, truly remarkable (and illustrative of the region) both ecologically and geologically.

Darwin Lambert
Director, White Pine Chamber of
Commerce and Mines
Ely, Nevada

AFA Endorses Cape Cod National Seashore

Meeting in Washington on March 25, the Executive Committee of The American Forestry Association urged that the National Park Service of the Department of the Interior be given full public support in the early establishment of the proposed Cape Cod National Seashore.

A resolution adopted by the committee headed by Karl T. Frederick, chairman, said in part that the "still unspoiled Great Beach portion of Cape Cod should be protected and preserved for the enjoyment of the public by creation of a Cape Cod National Seashore."

In accordance with the long established precedent followed by the National Park Service, the committee also said it hoped that substantial acreages can be acquired by gift or other private means as was the case in the Florida Everglades and other areas.

Following close study of a beautiful brochure released by the National Park Service on the proposed Seashore and private inquiries in Massachusetts, the Committee said there is no longer any comparable area in New England that exhibits all the values desirable and suitable for seashore preservation. The committee added that a recent National Park Service survey shows only 17 per cent of shoreline still available for conservation of seashore resources. This consideration would seem to outweigh the claims of realtors or other special interests, the committee said.

The committee voted unanimously to endorse the seashore proposal.



HAUL OUT MORE PROFITS

with a JOHN DEERE Woodland Crawler

PROFITS aren't "left behind in the woods" by an outfit with such low fuel consumption. This economical "440" Crawler with 602 Dozer and Gearmatic winch makes hauling even single logs a paying proposition.

Choose either the Diesel or gasoline model and you get ten per cent more power than earlier "440's" provided, plus a huskier transmission and new working speeds to take full advantage of this added work capacity.

Highly maneuverable, the "440" matches its log-hauling ability with a talent for cutting haul roads, building landings, and loading trucks—all at rock-bottom cost.

To see this outfit in action, make an appointment with your John Deere Industrial dealer now. For detailed literature, write Dept. 531, requesting specific information on the logging equipment you need.

Matched Logging Equipment

- Inside and Outside-Mounted Bulldozers
- Trailing and Integral Log Arches
- Hydraulic Fork-Type Log Loader
- Fireline Plow • Gearmatic Winch



Forester's Notebook

By KENNETH B. POMEROY

THE impacts of public pressures on privately owned lands, improving wood quality through genetics, better utilization of hardwoods, and better mechanization of timber harvesting occupied the attention of the American Pulpwood Association during a three-day February meeting in New York City.

Bernard M. Orell, vice president, Weyerhaeuser Timber Company, set the stage for a panel on the "Impact of Recreation on Privately Owned Lands" by reminding his audience that all uses of forest land are interrelated. When one use receives preferred treatment, it does so at the expense of other uses. Since all uses cannot receive equal attention on the same acre, the basic task of the woodland manager is to decide what use shall be paramount, and where and how to achieve it with the least adverse effect upon related uses.

Turning then to current debates over wilderness versus timber production Orell said, "Foresters recognize the need for preserving some undisturbed wilderness, just as dedicated conservationists appreciate the role of commercial forestry in maintaining the economic strength of the nation. The questions are how much of each do we need and who will decide?"

He concluded by urging foresters to stop talking to each other and spend more time with other groups in seeking cooperative solutions to mutual problems.

This admonition stimulated a check of the American Pulpwood Association program. It revealed that nine of the 22 participants represented interests other than pulp and paper. Six of them were from well-known conservation organizations.

The first panelist, Ernest F. Swift, executive director of the National Wildlife Federation, traced the historical background of public attitudes toward hunting and fishing on private land. Much of this is an outgrowth of the philosophy over which the Revolutionary War was fought. Some of the principles go back through the Magna Charta to earlier Roman and Greek law. The basic

premise is that game animals belong to the people regardless of land ownership.

Speaking from a wealth of personal experience, Mr. Swift closed by reviewing some familiar problems in deer management and forest regeneration. He reminded the audience that control of deer populations is a three-way problem resting jointly upon the hunter, the landowner, and the state game department.

Irving K. Fox, manager, Water Resources Department, Resources for the Future, Inc., forecast a ten-fold increase in recreational use in the next 40 years. He said the problem must be met eventually by either 1) dedicating larger areas to recreational use, or 2) making better multiple uses of all land. Single use, however, does not permit full realization of the land's social and economic potential. Consequently, multiple use of most forest areas will be necessary to meet future needs.

Digging deeper into the problem, Mr. Fox pointed out that recreational use of private woodland poses a question of reimbursement for the owner. Shall he be permitted to charge a fee, or should he be paid a government subsidy in recognition of public use? This could become a major policy issue in the years ahead.

C. West Jacobs, state park director in South Carolina, estimated future needs for public recreational areas in his state, and suggested that timber industries could ease the load by granting permits for limited use of company land to organizational groups such as the Boy Scouts.

Arthur H. Carhart, author of many forest and wildlife articles, likened land use management to city planning. There must be a master plan in which each use is evaluated as an asset and provided for accordingly. Positive planning, he said, is the best way to maintain leadership and keep ahead of community pressures.

Moderator Orell closed the panel with a reminder that the twin pressures, timber production and recreation, will be intense on private as well as public lands. Although timber production is paramount on com-

pany land, the corporate owner must also recognize his stewardship.

A second panel, composed of the technical chairmen of the six pulpwood-producing regions in the United States, discussed "New Developments in Lowering Production Costs." These included the rapid expansion in utilization of chips from wood residues, extension of the short spring peeling season by use of portable debarkers in the woods, mechanized loading, and the use of pre-loaded trailer truck trains that move up to 47 cords per trip. By comparison, a railway flatcar holds 18 to 20 standard cords.

A high point of the meeting was a 30-minute movie preview of things to come in the form of a "Busch Master" mechanical monster. This four-wheeled stepchild of designed engineering by the International Paper Company is being tested in Louisiana. In a single sequence of operations it pinches pine trees off at the ground line with claw-like beveled blades (saws waste sawdust), methodically clips the tree trunk into pulp bolts, places each stick on its back until a 7000-pound load is accumulated (1.1 cords). After binding with light rope (by hand alas!) the packaged load is deposited on the ground. A second rig, looking much like a fiddler crab with claw upraised, grasps the entire package and races off to the highway or railroad where the load is dispatched to the papermill by conventional means.

These innovations, while still confounded by many mechanical technicalities, indicate we are only a step away from the day when pulp trees will be chewed into chips at the stump and blown into conveyors pointed millward.

John Gray, extension forester in North Carolina, has initiated a training program unmatched, so far as we know, by any other state forestry organization. The basic plan is to train each staff man to handle a statewide assignment in a specialized field under which he will aid forest

(Turn to page 44)



TWO BIG "BREAKTHROUGHS"

By JAMES B. CRAIG

THE TWENTY-FOURTH North American Wildlife Conference, held this year in New York City, was attended by a good luck omen—the initial and unexplained appearance of a European redwing (*turdus musicus*), smallest of the European thrushes. While rapt New Yorkers followed daily newspaper accounts of the bird's activities at the Jamaica Bay Wildlife Refuge, delegates to the conference heard cheering news of imminent "breakthroughs" on two conservation fronts—forest and wildlife protection and water. The good word from New York is that research is marching on.

To foresters at the conference, the most important single pronouncement was that of Dr. Walter Dykstra, of the U. S. Fish and Wildlife Service, who reported that as a result of stepped-up research in the insecticide field there are now encouraging signs that hazards to wildlife from the use of insecticides can be greatly reduced. One of the new insecticides, Sevin, shows promise as a possible control for gypsy moth, spruce budworm, and certain other forest and agricultural pests. Data supplied by the manufacturer indicates that its toxicity to fish is only about 1/200 that of DDT, and the toxicity to warm-blooded mammals is about 1/2 that of DDT. Large-scale tests are scheduled this spring, and it is the hope of the Fish and Wildlife Service that encouraging results attained in the laboratory can be duplicated under field conditions, Dr. Dykstra said.

Of perhaps even more far-reaching significance, however, was an announcement by Secretary of the Interior Seaton, coinciding with the conference, of another remarkable breakthrough in converting salt water to fresh water. The secretary believes that a new process known as "long tube vertical multiple effect distillation" can get the cost of production down to less than one dollar per thousand gallons. This compares with about thirty cents per thousand gallons now charged for water used in American homes. The new process means that in one stroke Interior research specialists have cut two dollars off the previous cost per thousand gallons of distilling salt water. For AFA members who toured the arid Southwest last fall, the importance of this announcement will need no further elaboration. It may well prove to be the most important single development in conservation in fifty years—although we must be cautious in not counting our chickens until they are fully hatched.

In addressing the annual session of the National Wildlife Federation, Dr. Dykstra said that in its appraisal of the insecticide situation, "The Fish and Wildlife Service recognizes that pest control is necessary for the production of food and the protection of health for man and domestic animals. Blanket condemnation of the use of pesticides is neither reasonable nor practical. Many of these materials can and are being used with little or no significant harmful

effects on fish or wildlife. Their use in the suppression of destructive and disease-bearing pests at times indirectly contributes to food, shelter, and health of wildlife as well as man. Some of these materials are useful tools in wildlife management.

"On the other side of the ledger is the mounting evidence that rapidly expanding use of certain highly toxic pesticides poses a definite hazard to fish and wildlife populations wherever they are applied. When the treatment is restricted to specific agricultural crops that entail relatively small acreages, the local loss of wildlife, while spectacular, may not be serious. Such losses are more likely to reach significant proportions when these pesticides are applied in large-scale operations; when their residual effects persist for several years; and when alone or in combination with other pesticides, they are exposed throughout a major portion of the range occupied by certain birds and mammals."

One perplexing aspect of pesticide-wildlife relationships, and probably one of the most important, is the determination of the degree and significance of mortality resulting from the multiple exposure of migratory birds and wide-ranging mammals to a variety of pesticides applied in areas along their routes of travel, Dr. Dykstra said. This is particularly true of species such as the woodcock, which may winter in southern fields treated for fire ant or crop insect control and then move northward

in the spring to raise its young in areas of Michigan or New England where it may be exposed to other insecticides applied for forest or crop insect control. Since minute quantities of several chlorinated hydrocarbons in the daily diet of some birds are particularly detrimental to reproduction, the effect on breeding populations can be serious. This aspect of the problem has been explored by Dr. James DeWitt, chief of the Biochemical Research Division of the Fish and Wildlife Service. His laboratory experiments show very definitely that some insecticides affect reproduction, although others have countered with the statement that a bird flying free has a greater choice in what it will eat than a bird being studied under laboratory conditions.

The need for more facts continues to be great in this complex field, and a hopeful development at the conference was a plan outlined by the Committee on Agricultural Pests, Subcommittee on Vertebrates, working under the auspices of the National Academy of Sciences and the National Research Council. As outlined by Dr. Dykstra, this group hopes to serve as a catalytic agent in starting a proper assessment of losses caused by wild mammals and birds to agriculture, livestock, forestry, and related industries. This effort to help wildlife and agriculture to live together more harmoniously represents, in effect, an attempt to explore the over-all problem from a new direction, and could provide substantial aid in viewing the picture in its entirety. In addition to Chairman Dykstra, the committee consists of

Lloyd W. Swift, of the Forest Service; Dr. Walter E. Howard, University of California; Howard A. Merrill, Interior Department; Dr. James S. Lindzey, Patuxent Research Refuge; and Dr. Charles A. Dambach, Ohio State University. Both the Society of American Foresters and The American Forestry Association offered their assistance on this research project.

While the foregoing represent some of the quieter, and to some, the more constructive developments at the conference, the main battleground was the South, with the wildlife big guns zeroed in on the fire ant program. Following a blistering indictment of the entire program by its president, Claude D. Kelley of Alabama, the federation called for elimination of federal appropriations for the large-scale aerial application of chemical insecticides in the fire ant program, or of any chemical insecticides, herbicides, or fungicides where hazards to wildlife resources, beneficial soil organisms, domestic animals, or human health are indicated, until adequate research is completed both on the effects of the chemicals proposed and on safer methods of treatment.

Leading the onslaught in this quarter was Dr. Clarence Cottam, formerly assistant director of the U. S. Fish and Wildlife Service, and now director of the Welder Wildlife Foundation in Texas. While Dr. Cottam discounted efforts to curtail or completely eliminate use of all insecticides as unrealistic, he said the fire ant program is one of the most irresponsible, immature programs ever proposed by a federal

agency. He said it is ill-conceived and is being poorly directed.

That there has been loss of wildlife as a result of this operation was too well documented at the conference to leave room for any doubt, but recalling how the claims made by Long Island residents exploded in their faces when they went into a court of law makes any observer proceed with due caution. The mass of testimony on the fire ant was also colored by much emotionalism, and even found some biologists contradicting one another. One representative of industry said that spraying actually aided quail, but he couldn't think of any places where this had occurred, when challenged by a delegate from the King Ranch in Texas. These differences of opinion on the part of experts are confusing to a layman, and we are of the opinion that members who want to sift out the truth calmly should write for the proceedings of the conference. These can be obtained from the Wildlife Management Institute, Wire Building, Washington, D. C. The one fact that we were able to arrive at as a result of these exchanges was either that somebody isn't telling the truth or that they see the problem on so narrow a canvas that they can't arrive at any really constructive conclusions. While prevailing sentiment at the conference was unquestionably for immediate cessation of the aerial phases of the fire ant program, one also remembers that *somebody* must want these costly programs that have now blanketed an entire region of the nation.

We keep coming back to Dykstra. Here again, in speaking of the fire ant program, was the clear, small note of research progress like the march of the Pilgrims amidst the discordant clash of evil in *Tannhäuser*, when he reported on work by the Plant Pest Control Division of the Department of Agriculture at Gulfport, Mississippi. This work indicates that granular formulations of heptachlor and dieldrin may be stabilized and overcoated with a waterproofing material. "It is hoped that these modifications, coupled with tests to determine whether the dosage rate used in fire ant control operations can be reduced, will permit effective control with less loss to desirable forms of life," he said.

On the basis of facts disclosed in these controversial areas, there is one basic truth on which all AFA members unite. That is the fact that limited research in this complex field has already more than lived up

(Turn to page 52)

Ernest Swift Honored



Mr. Swift

Ernest F. Swift, executive director of the National Wildlife Federation, was presented with the Leopold Medal at the Twenty-fourth North American Wildlife Conference. The award, wildlife's highest and most coveted, was made by Dr. Charles A. Dambach, president of the Wildlife Society.

Mr. Swift, regarded as one of conservation's most articulate voices, started his career as a game warden for the Wisconsin Conservation Department, where his exciting experience with Chicago outlaws is a fascinating story. His rise in conservation was rapid, and much of his conservation philosophy crystalized as a

result of close association with the late Dr. Leopold, a pioneer forester who later became the outstanding spokesman for wildlife and wilderness in the nation.

Previous winners of the award are J. N. Darling, Carl D. Shoemaker, Olaus J. Murie, Ira N. Gabrielson, Harold Titus, Clarence Cottam, Hoyes Lloyd, C. R. Gutermuth and E. R. Kalmbach.

Washington



Lookout

By ALBERT G. HALL

A RESTATEMENT OF THE FEDERAL OBLIGATION TOWARD AMERICAN INDIANS and a more positive program for preparing Indian tribes and individuals for eventual termination of federal wardship have been proposed in several resolutions put before both the Senate and the House. The resolutions were stimulated by a speech made by Secretary of the Interior Fred A. Seaton in Flagstaff, Arizona, last September. The Secretary pointed out that the most recent declaration of Congressional policy is that of House Concurrent Resolution 108 adopted by Congress in 1953. This resolution, he said, had been interpreted by some people, "To mean that it is the intention of Congress and the Department of the Interior to abandon Indian groups regardless of their ability to fend for themselves." Mr. Seaton expressed his own position: "No Indian tribe or group should end its relationship with the federal government unless such tribe or group has clearly demonstrated—first, that it understands the plan under which such a program would go forward, and second, that the tribe or group affected concurs in and supports the plan proposed."

THE SEATON POLICY, STATED ABOVE, has been included in Senate Concurrent Resolution 12, introduced by Senators Murray of Montana and Neuberger of Oregon, and six other cosponsors, and in similar resolutions in the House by Representatives Anderson and Metcalf of Montana. Net effect will be to slow down the rate of termination actions, and to make it clear that the 1953 resolution was a statement of an ultimate objective and not of an immediate goal. In order further to implement the policy, Senator Langer of North Dakota has introduced S. 953, with 14 cosponsors, to provide a \$20 million program to stimulate development of employment opportunities for Indians. A similar bill, H.R. 5417, has been introduced in the House by Representative McGovern of South Dakota. Another bill, H.R. 5424, by Representative Metcalf of Montana, would adjust heirship problems involved in Indian trust or restricted allotments, and promote the development of Indian-owned or Indian-benefited enterprises. In part, the controversy that developed over the Klamath Termination Act, and the pending termination of federal jurisdiction over the Menominees, the Colvilles, and other tribes with forest assets has focused attention on the need for preparing the Indian to enter the economic and social life of the country.

THE NEW STATE OF ALASKA WILL SOON START TO SELECT OVER 103 MILLION ACRES of public lands to aid in its economic development. Procedural regulations for the transfer of land have been developed by the Department of the Interior. Alaska has 25 years in which to make the selection. In addition to 102,500,000 acres granted to Alaska by the statehood act, the new state may select up to 400,000 acres of national forest lands and 400,000 acres of other lands for townsite development. In 1929, the University of Alaska was granted 100,000 acres, not all of which has been selected; and since 1956, Alaska has had the right to 1,000,000 acres to be used in financing its mental health program.

SMALL BUSINESS ADMINISTRATION AND THE DEPARTMENT OF THE INTERIOR have formulated an agreement for the preferential treatment of small business concerns in the sale of federal timber under Interior's jurisdiction. A similar agreement was made by SBA and the Department of Agriculture last December. SBA has announced that the first timber set-asides for small business will probably be made in the Northwest. Under the agreements SBA will review the timber sales programs of the land management agencies and will recommend the designation of certain sales for small operators, if it determines that small business is not getting a fair

(Turn to next page)

share of the government timber. Interior reports that even without the preferential treatment accorded by the Small Business Act, small operators (those employing less than 100 persons) have been purchasing about 50 per cent of its timber sales, and that an additional 25 to 30 per cent of all Bureau of Land Management timber sales are to firms with 250 or fewer employees.

RESEARCH INTO INCREASED INDUSTRIAL USES OF FARM AND FOREST PRODUCTS has been the subject of Congressional hearings during the past month. Purpose is to bolster farm income by providing markets for agricultural surpluses and for the products of the small farm woodlands. There have been many bills introduced, all of which propose federal financing of research and pilot plant development in cooperation with public and private institutions and business organizations. It is expected that a program will be approved this year.

A FIREFIGHTING AIR CORPS IN THE FOREST SERVICE has been proposed by Representative Hiestand of California. The function of the air corps would be to assist in combating fires in national forests and major forest fires in other areas. The Forest Service reports that the use of aircraft in 1958 resulted in a reduction of almost 15 per cent in acreage burned, despite a 53 per cent increase in the number of fires over 1957. Aerial dropping of fire retardants was not used in the national forests, except experimentally, until 1956; but in 1958 almost 1.5 million gallons of retardants were dropped. Helicopters, once used only for reconnaissance and occasional transportation of men, are now used to lay hose and to spray fire retardants. Most of the aerial work is now done under contract with private individuals or firms; but the Forest Service owns 32 airplanes and one helicopter. The Hiestand bill seeks to provide a corps to be maintained in a state of readiness in the major forest fire danger areas.

STAFFING OF THE NATIONAL OUTDOOR RECREATION RESOURCES REVIEW COMMISSION is now under way, following passage by both Senate and House of an amendment to the act which allows staff to be hired without regard to Civil Service requirements, and the appointment of Francis W. Sargent as executive director of the commission. Sargent, former commissioner of the Natural Resources Department of Massachusetts, assumed his duties with the NORRRC on March 1. As Massachusetts commissioner he headed the state divisions of Fisheries and Game, Forests and Parks, Law Enforcement, and Marine Fisheries.

SUPPLEMENTAL APPROPRIATIONS FOR THE CURRENT FISCAL YEAR have been requested by the President. The \$2.4 billion request includes Forest Service items: \$8.5 million for fighting forest fires, \$1,003,400 for forest research and \$102,800 for state and private forestry cooperation, to be financed in part by transfer of \$5,432,200 from the Conservation Reserve Program of the Soil Bank. The need for additional funds stems from the bad fire season, particularly in the West, and from pay increases authorized last year. For the Bureau of Land Management, \$2.5 million is requested to meet forest fire suppression costs, and \$1,314,000 to meet pay increases. The National Park Service request of \$1,388,500 included \$200,000 additional for fire suppression. The supplemental request also includes \$350,000 for the work of the National Outdoor Recreation Resources Review Commission; \$100,000 for the Southeastern Water Study Commission which is studying the water needs and water development possibilities in South Carolina, Georgia, Alabama, and Florida; and \$150,000 for the Texas Water Study Commission.

THE WILDERNESS BILL HAS GENERATED MORE CONGRESSIONAL MAIL than has any other domestic issue. Proponents of the bill to create a national wilderness preservation system apparently have developed a "write to your Congressman" campaign that is really effective. It is reported that the mail bags are heavily weighted in favor of passage of a Wilderness Bill.

TRANSFER OF PUBLIC LANDS TO THE STATES FOR RECREATIONAL PURPOSES now has a 640-acre limitation. Western states are petitioning the Congress and several bills have been introduced seeking to remove the limitation. Back in 1926, Congress passed an act permitting the states to acquire lands for public park purposes. No limitation was imposed by the 1926 act. However, in 1954, the act was amended to permit disposal of public lands for all public purposes and to allow nonprofit organizations as well as local governments to acquire public lands for public purposes. At that time the 640-acre limitation was placed in effect. Western park commissioners, both state and local, have found that the limitation is quite restrictive and a deterrent to state protection and development of recreational areas.

Editorial - Congratulations, Mr. Benson

A blueprint to provide more timber, water, recreation, wildlife and other renewable natural resources from the nation's increasingly valuable national forests was proposed on March 24 by Secretary of Agriculture Ezra Taft Benson. With special letters to the President of the Senate and the Speaker of the House, Secretary Benson submitted a program to advance management and increase facilities of the national forests in coming years to meet the needs of a growing population and an expanding economy. The proposed program defines needs on the forests in concrete terms as spelled out by two consecutive Programs for American Forestry adopted by The American Forestry Association in 1947 and 1953. As such, the secretary's proposal represents a sound approach to present problems on the forests, and it will receive wide support. In short, this program gives us something to build on.

Secretary Benson said the current proposal completes the program for full resource development of the national forests as called for by President Eisenhower in his special message to Congress on July 31, 1953. As a result of that message, management of the national forests has been substantially improved in recent years, the secretary said. Tree planting has been doubled, forest fires have been materially reduced, and the timber harvest has reached new records. At the same time, the secretary readily admits the forests still have a long way to go before they can begin to approximate the degree of intensive management presently practiced on some of the larger industrial forests.

However, if this program goes through as proposed the national forests will one day stand second to none anywhere in the world. For example, the secretary proposed to ultimately treble present income from the forests, 90 per cent of which will represent sale of standing timber. If the blueprint develops on schedule, the year 2000 will see timber sales reaching 350 million dollars with an annual cut of 21 billion board feet of sawtimber. The immediate short term goal will be to hike the recent record cut of seven billion board feet to 11 billion within the next decade with harvesting developed in a manner that will accelerate cutting of stagnant stands, release advanced reproduction by removing the overstory of old growth, increase the salvage of dead, dying and diseased trees, and encourage reasonable distribution of sales among all sizes of operators.

At the same time, the Forest Service proposes to develop and apply on sale areas higher standards of regeneration, hazard reduction, salvage and erosion control. It will provide up-to-date inventories of all commercial forest lands, and timber management plans will be completed for all working circles, and when completed will be maintained by periodic reinventories and revisions. Approximately three-fourths of the 4.4 million acres of nonstocked and poorly stocked plantable lands will be seeded or planted. The productive condition of over 11 million of the 30 million acres of less than sawlog-size stands will be substantially improved by plantation care, pruning, weeding, thinning, release cutting, reinforcement planting of lightly stocked areas, and planting new burns in these stands.

Hand in hand with these production quotas and production goals goes a proposal to complete construction and reconstruction of 90,000 miles of access roads and 8,000 miles of trails at the earliest possible time. This represents about 19 per cent of the total number of roads and trails ultimately called for. When fully installed, there will be 70,000 miles of forest highways, 542,000 miles of access roads, and the trail network will be reduced to 80,000 miles. There are now 24,400 miles of forest highways, 149,700 miles of forest development roads and 112,200 miles of trails. No single proposal in this comprehensive plan received louder cheers from AFA officers than did this plan to get the roads built so that the Forest Service can start practicing forestry on a scale never dreamed of in the days of Pinchot, Graves and Greeley.

Neither space nor time permits us to fully describe the improvements proposed for every use of the forest including water, range and recreation resources. These will be fully covered in the May issue of *American Forests* and suffice it to say here there is something here for everybody, and if present plans materialize all of these important uses will be brought up to a state of perfection seldom dreamed of by most of us in even our wildest dreams. The programs proposed, in short, would put the national forest system in A-1, apple pie order and people everywhere would regard them as another wonder of the world. Water flow will be increased through more intensive management of watersheds—welcome news to 1800 western towns and cities served by national forests water and for most irrigated farm lands and hydroelectric developments. Fuller development and use of grazing lands will result from large-scale reseeding of grasses on depleted ranges, control of poisonous plants, and construction of fences and water facilities. In carrying out the previously announced Operation Outdoors, the new proposals will see both parts of this program in full swing. Ten thousand new campground and picnic sites containing 102,000 family units are proposed. Improvement of 7,000 miles of the 81,000 miles of fishing streams and 56,000 acres of lakes by stabilizing banks, planting streamside cover, and constructing channel improvements are also in the plans.

These, then, are just a few of the highlights in this remarkable plan, and returning to timber management again it occurs to us that here is one constructive answer to the series of stunning advertisements currently being featured by the lumber industry which have already rocked lumber's competitors back on their heels. In addition to selling wood, this old industry is telling the world in no uncertain terms that lumbermen believe in their product. Moreover, they imply that lumber has faith in forestry to produce enough wood of sufficient quantity and quality to stave off all challenges posed by wood substitutes.

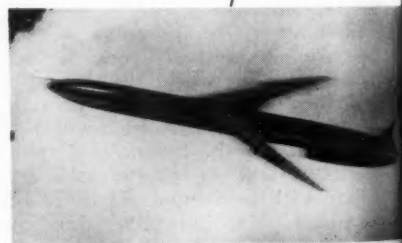
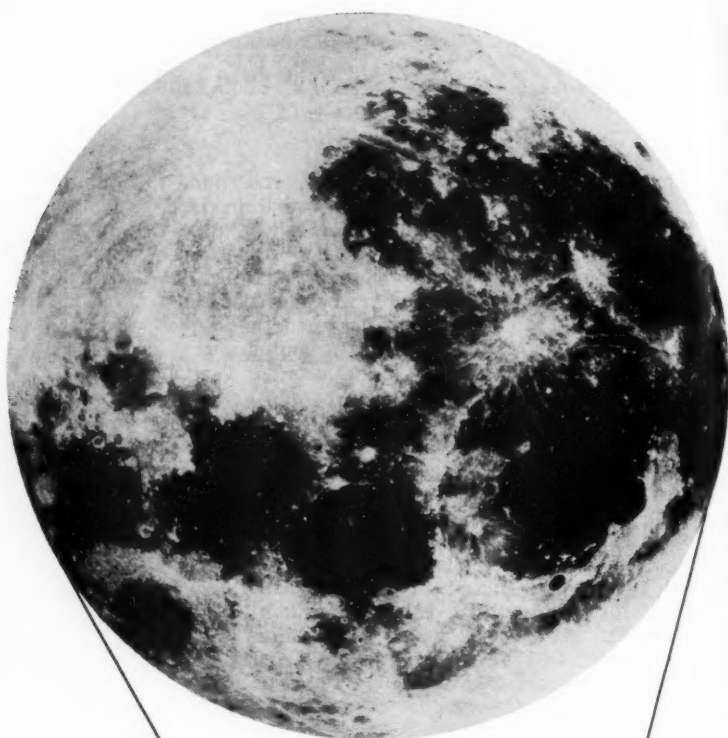
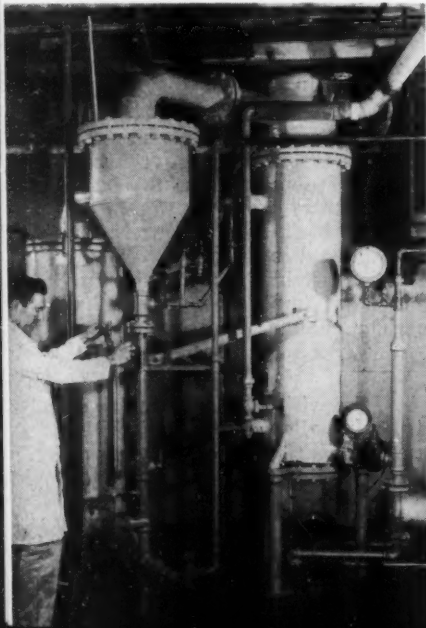
With forestry showing the vision demonstrated in Secretary Benson's plan, all challenges will indeed be met and forestry in America will rise to new plateaus of achievement. Here, in truth, is a working model for balanced multiple use on forest land.

By J. A. HALL



Dr. J. A. Hall is the director of the Forest Products Laboratory, operated by the Forest Service at Madison, Wis.

Pilot-plant equipment used in chemical research. Sugars from hardwoods promise products of economic value



Resource Management:

A BASE FOR FREEDOM

NESTLED among the limestone hills around Paoli, Indiana, is a 90-acre tract known thereabouts as Cox Woods. Though long since engulfed, it was never quite swallowed as white men settled that area, and somehow its fine old hardwoods were left in their pristine state. Through the efforts of a group of citizens among whom I count myself—I wandered those hills as a boy—this rare living relic of the past has become a permanent memento of what used to be. I am glad that Cox Woods is safe; all of us need such reminders of what was exchanged for what we now have. Coming generations will need them even more.

But these little islands of the past are more than reminders. They are measuring sticks and, in a sense, chal-

lenging symbols of what the good earth, given a chance, can yield. We can profit much from them as we set ourselves to the enormous tasks ahead of us—tasks that must be done if we are to leave a useful heritage to those who follow us. For the mirage of boundless resources that long misled us has dissipated, leaving unveiled in all too many places the harsh reality of a land defiled and waters muddied with filth.

Nor has this experience been ours alone. In many lands, desert sands drift aimlessly over once-fruitful fields, and barren crags tower where forests once grew. The same sequence has been repeated over and over again since ancient times. I need only quote from the prophet Ezekiel, who exhorted the Israelite shepherds some 2,500 years ago: "Seemeth it a

small thing unto you to have fed upon the good pasture, but ye must tread down with your feet the residue of your pasture? And to have drunk of the clear water, but ye must foul the residue with your feet? And as for my sheep, they eat that which ye have trodden with your feet and they drink that which ye have fouled with your feet."

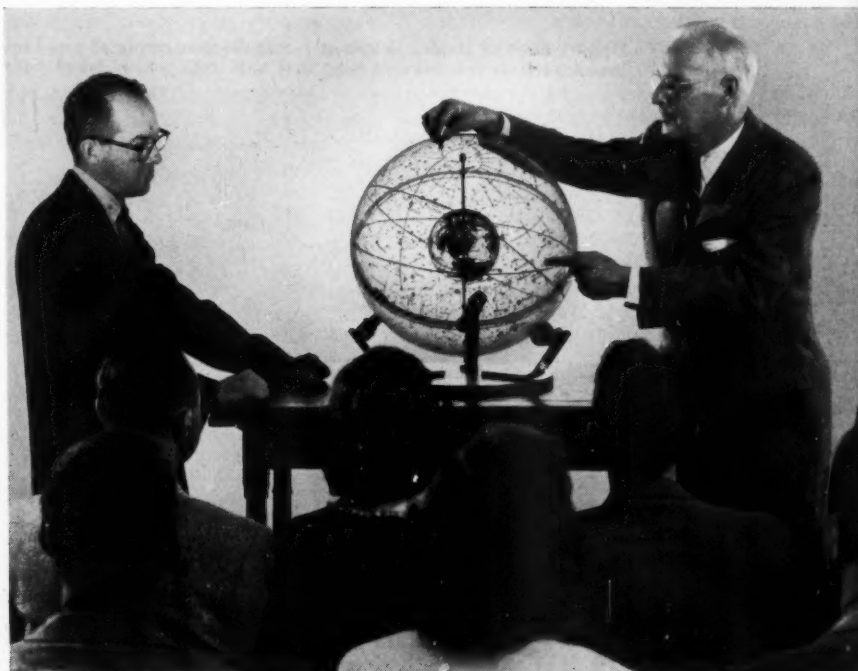
Ezekiel's thoughts, if not his words, have been expressed countless times through the intervening centuries by men concerned about the future. Seldom, however, have they applied with more urgency than today. In fact, a stranger from another world might readily conclude, from the evidence at hand, that man is helpless to act in his own best interest no matter how plainly he sees it.

The stranger would be wrong.

New clues to complex structure of wood being sought with electron microscope



We have the tools and techniques for restoring and revitalizing our natural resources, but where tools are inadequate we have the intellect, knowledge, and productive capacity



Whatever the compulsions that in the past have impelled us to act as we have—exploiting, plundering, despoiling for the gain and glory of the moment and heedless of tomorrow—those compulsions are no longer overpowering. In our blundering way, often at terrible cost, we have succeeded at last in forging the tools we need to make our conquest of the earth real and permanent, and to assure a good life for our descendants.

In our own land we are superbly equipped with those tools. We have the knowledge, the intelligence, the laboratories, factories and farms, the physical vigor and skills, and above all the political and economic freedom which embrace those tools. We have them in an abundance never before attained by any nation. True, the cost in natural resources has been great; but the thing of paramount importance is that we have the tools, and with them can regenerate our land. Indeed, we must!

How it came about that we in this country are so well equipped to meet the challenge of our time is, I think, worth reviewing, because what has happened is in a large sense only the preamble to what, if we so desire, can and must follow.

To begin with, our European ancestors came to a continent so fabulously rich in raw wealth that even the wildest guesses could not encompass it. By his own sweat and labor,

a man could create a home, a farm, a business from the wilderness; and when his children grew up, they had only to move farther west to repeat the same process. Whatever freedom men sought, whether religious, economic, or political, was here for the taking, far from foreign kings and dictators and feudal lords. A whole new culture and outlook on life germinated and flowered and was carried westward in the minds and hearts of the pioneers. Its crux was the dominating urge to settle, to clear the land, to build homes, communities, churches, schools, places of business and pleasure, the necessary arms of government. And, since in these pioneer communities men were untrammelled by the shackles of feudalism and could act independently, political freedom bloomed alongside economic freedom.

The dynamic spirit thus born and fostered in the hothouse culture of a seemingly boundless land reached its first full flowering in the American Revolution, the Declaration of Independence, and the Constitution. Once the last restraints of Europe were thrown off and the new rules of living for free men put into effect with a national government, that spirit became all-pervasive, dominating our thoughts and our actions. Throughout the nineteenth century we pushed westward, clearing the forests, plowing the prairies, building, building, building.

There was a limit of sorts, after all. But even when we reached it, out where the Pacific laps our shores, it didn't seem to matter. Between it and the few million people still largely concentrated along the Eastern seaboard was an expanse so vast it took half a year to cross—a land of forests, then open prairies, then the high plateau and the mountains, and again more and even bigger forests. There were stories about golden cities of an unknown past, and who could guess what other wealth was locked among those towering peaks. And so we went on building, thrusting new trails westward, following up with stage roads and railroads that shrank distances and sped ever-mounting numbers of settlers onward to new lives and homes and fortunes.

Oh, there were lulls. We paused now and then to fight a war, or to get over an economic bellyache caused by too-hasty mastication of this lavish national banquet or by just a momentary uncertainty about whether it could go on like this. But the firing would soon cease and the war veterans would swell the westward tide with new treks to free land grants; and the belly pains would fade as new riches were tapped and free men's ambitions soared to greater heights.

From the beginning, too, there were men who voiced the new-found freedoms—a veritable cacophony of voices, from Poor Richard's homely

Despite marked strides in recent years, the processing of wood into useful products still entails losses, such as this sawdust pile, that bulk into astronomical figures for the country each year.



In testing for strength properties of wood, electronic machine applies loads, measures and charts the results in basic data curves

A chemist operates bank of controls and recording devices in high-pressure hydrogenation research on chemical composition of wood



strictures about sensible living and Tom Paine's Rights of Man and Patrick Henry's oratory to the political debates between the Clays and Websters, the Lincolns and Douglasses, the Bryans and McKinleys, and the economic tirades of F.D.R. Through it all ran a familiar theme, whether the writers and politicians railed against foreign masters or slave owners, extolled the merits of free silver, or denounced the malefactors of great wealth. One and all, they were concerned with the physical, political, and economic well-being of free men.

Stimulating and accelerating the pace at which development proceeded was the inventive genius that sprang into being with the physical discoveries of the machine age. The cotton gin, the grain binder, the revolver, the telegraph, the steamboat, the electric light, radio, autos, television, washing machines and central heating—and the concept of mass production that spawned them in profusion at low cost. These inventions and many others helped catapult us to unheard-of heights of prosperity. Through physics, chemistry, and engineering we learned fantastic new ways of converting virtually any raw material into things of use and profit.

Thus have we become the colossus among modern nations, rich beyond Croesus' wildest dream, the envy of less happy men everywhere. And we

go right on building—one million homes a year, five million cars, plus schools, skyscrapers, supermarkets, factories, churches, hospitals and bowling alleys by the thousands. The wherewithal we dig from our mines, cut from our forests, pump from our oil wells, mow from our fields.

For each of us, in a year, this voracious economy requires 1,400 pounds of steel, 1,555 pounds of wood, and proportionately astronomical amounts of everything else that goes into the things we build and use. A part of that wood is used to make 425 pounds of paper for each American. Contrast that figure with less than one pound per person in India and you get some measure of how lavishly we employ this forest resource!

Lately, to keep the horn of plenty overflowing, we have discovered a new natural resource—the man in the white smock, manipulating test tubes and computers on our TV screens and coming up daily with new magic ingredients; the man who prosaically calls himself a scientist but whom our advertising copy writers hail more knowingly as a magician. He is the man who'll keep us feasting when the forests are bare, the wells dry, and the mines stripped. He will take this thing called atomic energy, and with it mix atoms and molecules and change the very rocks to gold, the sea water to fuel, and sand to silk. After all,

we have limitless stone, sea water, and sand! He will go on doubling and redoubling the productivity of our fields, the protein poundage of our livestock. He will rid us of disease, and take us to the moon and beyond. Maybe, if we give him time, he'll confer on us the fifth, the ultimate freedom—the freedom from death! (I've racked my recollection, but can't seem to remember anyone yet having the temerity to suggest that maybe our scientists will do away with taxes too!)

I have worn a laboratory smock, though not before the TV camera, and for most of my life have lived among and worked with scientists. And, while I realize that in our age it is folly to deny something can happen, I want to note for the record that I have never yet met a man, scientist or not, who had even the faintest aura of a magician about him. In general, my research compatriots have been just honest, intelligent men with perhaps a mite more love of truth than most, who shudder a little every time they turn on their television sets.

If I appear thus to be skeptical of the power of science to replenish and expand our material resources, it is not because I doubt the powers of science. It is only that I earnestly believe science cannot do the job alone, while the rest of us carry on as usual, building, producing, consuming in ever increasing numbers.

In truth, science cannot *do* anything at all. It can only tell us *how*. It is up to all of us, as free men, to act. Only then can our science be brought to full realization of its potential.

We have made broad and sometimes gratifying use of the findings of science. Industry and agriculture both have become pretty thoroughly oriented to the philosophy that research is one of the essentials of doing business. Some of our more "progressive" industries plow 5 to 10 per cent of their gross into research and development. (Unfortunately, the forest products industries as a group are not among the heavier spenders!) Our government annually pours billions into research, though largely of the kind needed to maintain our military establishment or to expand agricultural productivity. The fruits of research are readily apparent all around us, from the vapor-proof wraps on our vegetables and the gadgets in our homes to the man-made comets that wink in the skies above us.

But the soil on our farms continues to deteriorate, the logs that come from our forests become steadily smaller and knottier, our oil-hunting drills probe deeper into the earth, our ores get progressively poorer. It would seem, therefore, that in our use of science we have not been

succeeding too well in one all-important respect: checking the drain upon our natural resources. It is this lack of success that troubles me and that I want to examine in some detail today.

As I have already remarked, we possess the tools to do a far better, more extensive job of husbanding our natural resources than we are doing. Many of these tools were acquired almost as a byproduct of our dynamic expansion, our incessant urge to build and rebuild and improve or enlarge upon what we have. Call it what you will, the profit motive, the desire for an easier life, the galvanic interaction of free men seeking independently for personal betterment, the struggle for artistic expression, the urge to explore, or the scientist's inquisitive search for reasons why—all these have been manifestations of pretty much the same basic thing: mankind's universal striving toward a higher plane of existence.

In our free society this urge has flowered as nowhere else on earth. From the humblest immigrant's self-denial for his children's education to the building of great universities and research laboratories is, after all, nearly a straightline action completely in harmony with our national pulsebeat. The same is true for the man who launches a new business; if it serves his fellows and is well managed, both he and they benefit. For that is the purpose of our freedom: to encourage and catalyze into action the desire to help oneself within the framework of benefits to one's fellows.

So it is only logical that, when a company develops a more effective product through the facilities of its research, the benefits spread through our society, creating not only consumer satisfaction but jobs and, not to be overlooked, profits for future research and investment. We have seen, in our time, innumerable examples of this process in action, so many, in fact, that I fear we have come to accept it as a kind of natural law, rather than a system conceived and fabricated by free men and functioning by and large as they designed it.

Where, then, is the flaw in this system that has functioned, and continues to function, so effectively along the lines planned for it? Or is there really a flaw?

I do not think the basic assumptions upon which the architects of our political structure acted are at fault. Rather, it is that we have been

too preoccupied with the building of this land and society of ours to recognize one basic fact about its design. As I have attempted to emphasize, we have tended altogether too much to ignore the fact that the material resources upon which we have built are not in themselves inexhaustible. And ignorance of any kind can be fatal to freedom.

I use the word "ignore" advisedly. I think we are all acutely aware of the exhaustibility of our raw materials. Ever since colonial times, there have been voices raised in warning. During the latter part of the nineteenth century we began to bestir ourselves somewhat. Along about 1900, the word "conservation" was arousing strong responses within us, and I am happy to say that among the first significant acts stimulated by those responses was the creation of our great national forests. This was only natural. We have always been a heavy wood-using nation; our homes are largely framed and floored of wood, and wood products are all about us in great profusion. We even created the world's first research laboratory for forest products, back in 1910. This institution I now have the honor to head.

Perhaps a word of explanation is in order about those national forests, which have already returned to the public treasury a billion cash dollars from timber sales, grazing fees, and similar business activities operated by private enterprise. They are public properties managed by the federal Forest Service. They are not, however, mere repositories of timber stockpiled against some future need. On the contrary, the basic policy prescribed by the Congress for their management is that they be harvested regularly at a rate geared to their ability to reproduce and maintain a constant level of standing timber. That level is determined not by the stand existing at any moment but by the ultimate productivity of the forest, determined as carefully and scientifically as we know how. Thus the Forest Service aims not only at maintenance but at constant improvement in its management plans.

I suspect that right here some of you may be saying to yourselves, "That's all very well; but the Forest Service doesn't have to meet payrolls and tax assessments and stockholder dividends from earnings of those national forests." Which is true; nor do I propose that all our natural resources be handled in the same way. (Turn to page 58)

TV Teaching

A few years ago, Allen H. Benton, of the New York State College for Teachers, was reaching only 100 students a year with his conservation message. Then he hit on the idea of presenting a weekly conservation program over Station WRGB in Schenectady. The station liked the idea and gave Prof. Benton a spot.

There are more than half a million sets in the area served by WRGB, and it has been estimated that Prof. Benton's Hooper Rating shows that he now reaches between 5,000 and 12,000 people every week. Not big compared to an NBC spectacular, true, but a big jump compared to 100. Moreover, Prof. Benton has developed a devoted following including one lady 85 years old, and several four-year olds.

The tricks of the trade? Hit them with something interesting the first minute or they flip their dials. Remember that variety is the spice of television. Use one visual aid per three minutes of viewing time, with no more than five minutes between visuals "unless you are a real spellbinder." Finally, remember that when the station says you have 27½ minutes it means exactly 27½ minutes, no more no less.

Think what thousands of conservationists could do if they were to emulate Prof. Benton's example.

A Children's Forest



By E. J. LEVER

TO meet an ever-crucial need for conservation of our fast-dwindling natural resources, we must find more effective means to initiate the young who will inherit this land. These are the offspring of many who escaped from the "cradle of civilization" to a crude new land of unimagined abundance and who soon chose to ignore William Penn's sage advice: "That in clearing the ground care be taken to leave one acre of trees for every five acres cleared . . ."

So great was this abundance in the eyes of the new arrival that armed with but fire, musket, ax and ox he early acquired a consuming passion to have it all to himself. With fire-water and musket, the Indian went. With fire and ax, the tree went. With the ox, the stump went. And with plow and ox the ancient earthen crust was stirred, clear down to bedrock.

Belatedly, all this has forced us to move much faster towards a Society of Understanding. Through sheer necessity, we spend much effort to educate the adult, even though we know that his life's habits are formed long before his exposure to many of its verities. But we also know that "give me a child until it is seven" still holds true. Had we not begun to bring about the promise of American life through public education since the clamor for it culminated in its practical beginnings during the 1830's, we would still inherit one generation after another which couldn't even read or

write, let alone exercise some imagination beyond the biology of eat, breed and die.

Now, the need is ever so much greater. For after just one century a whole continent is all but destroyed. Now, on the brink of the Pacific, the sole road to survival is a return journey—to revive the very land we ourselves destroyed. Yet, with notable exceptions in our folklore, it is only through education of the young that we can really accelerate our people's education in the need for conservation. Hence one method, almost ready at hand, may prove of some value.

One obvious reason for so little

understanding of conservation is that after a single century of intensive industrialization an overwhelming majority of America's 170 million are now concentrated in heavily populated areas. In contrast to the first census under the Constitution in 1790, when 90 per cent of the three million inhabitants were mostly self-employed, we now have employee-communities, almost solely dependent on wage or salary. Squeezed close together on miles of treeless streets and with little open space, schooling for the young thus also became one of little communion with natural phenomena. What a

(Turn to page 62)

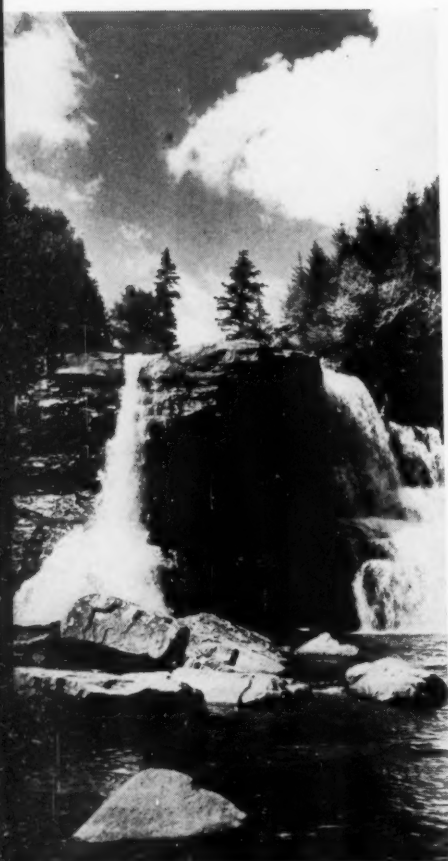
Maurice K. Goddard, secretary, Pennsylvania Department of Forests and Waters, explains significance of rings of historic sugar maple in Washington Crossing Park



TO THE WOODS FOR DELIN



West Virginia's ten million acres of forest land mean different things to different people. To the lumber industry they are seen as an inexhaustible supply of the world's finest hardwoods. To conservationists, these acres are the backbone of a \$225 million tourist industry, headwaters of 8000 streams, employment for 13,000 full-time workers, and a treasure to be guarded against fire. These timbered acres are all of this and much more. Just as doctors send men fishing to cure their nerves, West Virginia is now sending her delinquent boys to the



Camp is located near areas of inspiring scenery such as Blackwater Falls

New arrivals at the camp must learn to use a shovel, ax, saw, and hammer



DELINQUENT BOYS

By ROBERT R. BOWERS

woods in the hopes of curing their delinquency.

It is believed by those in charge of this mission that the outdoors can sometimes do what home, society, and prison fail to do for growing boys. The woods, they claim, can often help them find themselves and their place in society. That is the premise upon which the forestry camp for delinquent boys near Davis, West Virginia, is based.

Situated high in the mountains of Tucker County, a mile or so from the state's giant new Blackwater Lodge, some sixty boys—or more

correctly, young men—now spend their time working in and around the woods. They are working for the state, but foremost they are working for their own good. There are no walls, bars, or screens and their attendants are not armed.

These boys are violators, but in the strictest sense they are not treated as prisoners. The majority would have been in the state penitentiary had it not been for this camp. Some are transfers from the industrial school. Those granted the privilege of attending camp as opposed to prison are regarded as "likely to bene-

fit from an opportunity for self-rehabilitation."

The desire among the judiciary for such a youth rehabilitation camp is found in the statement of Judge William J. Thompson, of Charleston, West Virginia, who was a prime mover in the establishment of West Virginia's first camp back in 1955. As he left from his first visit to the newly located camp near Davis, he said: "You don't know what a load the establishment of this camp has taken off of me. I don't like to send young people to the penitentiary if

(Turn to page 51)



Attendants at the camp are not armed, and boys are honor-bound not to leave



Rehabilitation is best accomplished by leadership, counseling and understanding



One of many projects completed by boys was roadway into the Blackwater Lodge

Dormitories have no bars or screens to prevent boys from running away at night

A black and white photograph featuring a large, dark, silhouetted branch of a flowering tree, possibly a cherry tree, extending from the left side towards the center. The branches are covered in small, light-colored blossoms that catch the light, creating a stark contrast with the dark foliage. The background is a dramatic sky filled with large, billowing clouds. The word "APRIL" is printed in a large, bold, serif font across the middle of the image, partially obscured by the tree branches. On the far right edge, there is a vertical column of text, including a large letter "M" and some smaller, partially visible characters.

APRIL

M
P
a
c
u
r



Trees closest to the streams are first to blossom in W-Hollow

Month of Firsts

By JESSE STUART

EACH tree in the forest has always wanted to be the first to awaken after a winter's sleep and to get dressed in spring's new finery. Each tree wears a slightly different outfit in shape and design, but the color in early spring is nearly always soft green. There isn't a lot of difference in what the trees wear. It is just in their being the first to awaken and dress.

Each spring the very first tree in W-Hollow to arouse itself is our weeping willow. This tree has always awakened and dressed before the alarm clock went off for spring. Once its leaves came out in late February. There were many warm days and this weeping willow, being a light sleeper, was stirred from its slumber by the scurrying winds who whispered, "Hurry! Spring is coming and you are still brown and naked! Get dressed for spring."

These warm days lured our tree into a false season, for winter rushed in bringing snow and freeze and killing all of its tender green leaves. Then our willow went sorrowfully back to sleep and its re-awakening was delayed. But in late February and early March, when it is prematurely awakened and has dressed in a thin robe of green wind, it is a beautiful tree.

This year has been most tragic for our weeping willow. It was a beautiful light green cloud and its long, hanging fronds were green fingers clawing at the stiff cool breezes of late March. Then, came snow, sleet, rain, ice, freeze, and each long frond became a naked switch that madly slashed at the wind in reprisal. Our tree went back to sleep again and has just now reawakened and is putting on a new, green robe. But it is getting dressed much later than some of the other trees that had not awakened before the freeze and frost came and killed all the flowers and the green vegetation.

I have been walking each morning to my woods and looking at my old friends the trees, speaking to them and touching their smooth and rough bark with my hands. I have been watching to see who has awakened from a long winter night of somber sleep. I have taken notes for my journal on the trees that awake from their winter resurrection and get dressed for a new season of growth and life. The first trees to awaken and dress are those the closest to the streams. For many years I have wanted to know this, but I

have not had the time to make this study. This spring I am taking time enough to do what I have always wanted to do.

Here I have found the buckeye, with leaves so big that I have always liked to call it the elephant-eared tree. These big, green leaves now flap on the spring winds. They are elephant ears among the leaves, and they are supple, green, and beautiful. These trees, due to the freeze and frost, have been delayed two weeks or more. But they are almost fully dressed now. The few buckeyes might be the first to be gowned in their spring finery.

Next is the wahoo tree, which is akin to the buckeye, only there are so few of them. I have seen only two wahoos this spring. I spotted them from a distance, since their leaves are larger than the buckeye's. If the buckeye can be called the tree with the elephant-ear leaf, then the wahoo can be called the tree with the mastodon-ear leaf. They look like tropical plants with their large, broad leaves. The old people used these mastodon-ear leaves for fans. And, before the time of screens and fly swatters, they used the wahoo leaves to shoo the flies from the house and the table. These two al-

(Turn to page 42)



S. L. Frost, Division of Water, Department of Natural Resources, O.

OUR water problem today revolves around a great triangle. At one point are people, with their needs and desires. At another are their governments, local, state, and national, created to assist in meeting those needs. At the third point, rests the question of money, or the way to finance the improvements needed.

That may be a tremendous oversimplification of this whole problem. In fact, when you think about it a moment, you will be quick to say that the same combination applies to building roads and schools and to almost any other line of public endeavor today.

You will also immediately recognize that the same basic triangular concept can be stretched from a small local water problem to a much more complex state, national, or world-wide situation.

How we fit and juggle our various levels of government assistance, and our ability to pay for the things we want to satisfy the needs of our people has been, for the water resources field, the subject of long and continuing debate and often bitter controversy. On this battleground we have tried, rather unsuccessfully, to hammer out a national water policy.

Other than the fact that water policy itself is so nebulous and subject to the pressures of people and their legislators, one of the difficulties seems to lie in the fact that we have perhaps failed to grasp some of the fundamental truths about water itself as a resource.

Moving as it does through Nature's fascinating hydrologic cycle, water is not a resource that we can box up acre by acre like land, trees, grass, and minerals. Nor can we

FACING UP TO OUR

By S. L. FROST

destroy water and deplete its supply in the same sense that we mine out minerals. Neither can we consistently increase the supply the way we can grow more trees and grass.

Water is a resource constantly in motion. World-wide, we have as much now as we had millions of years ago. But the quantities made available to us from the skies above constantly change and shift from place to place, and from time to time. These extremes of distribution fall and rise like the crescendos of a great orchestra. We can be knee-deep in floods or bone dry from droughts in the same year in the same place. This too much—too little water combination reminds us of the Texan who was seen rowing across the flooded street in his town to collect his government drought disaster check.

Just how to deal with this fickleness of Nature has been, and always will be, a real puzzler. It involves a drama of tremendous proportions. Its stage is world-wide. We would need to learn how to harness and control the air masses, weather, and rainfall. Perhaps, as our scientists gradually draw back the curtains of mystery still surrounding our universe, mankind may emerge as the master of Nature. Until that day is reached, we must seek the answer elsewhere.

Let us say for now that there is no way by which we can legislate rainfall. By no statute can we turn the faucet on and off from the skies above. No law, no matter how skillfully drawn, creates water. Somewhere other than in our inability to pass laws to make it rain or stop raining lies the answer to a better water future.

What is this future and how do we approach it? In peering into a
(Turn to page 47)



WATER PROBLEM

extensive reforestation projects were undertaken along the shores of many large reservoirs within the Muskingum Conservancy District



An Interview with Harlean James

By JAMES B. CRAIG

WHEN Harlean James says the "automobile was a declaration of independence for men, women, families and particularly women," she knows what she is talking about. She first drove across the continent in 1923 in a Dodge sedan with wire wheels. At that time there were no paved roads west of St. Louis, and 186 miles represented a good day's drive. She has made similar trips every two or three years since, her last being in 1954. On the last excursion she averaged 500 miles a day and regarded with pleasure the many "You Are Now Entering . . ." signs that usher the motorist into the delights presented by parks and forests of all types and varieties, including scenic parkways. How anyone can oppose the construction of such parkways by the National Park Service baffles her, she confesses. "You'd think such construction is subversive to hear some of them carry on," she told us. "Yet the national parkway idea was first promulgated by Stephen Mather himself, and what was good enough for Stephen Mather is good enough for me."

The fact that there are more parks today than there were in 1923, particularly of the state and municipal variety, must be attributed at least in part to the efforts of Miss James. She has made "planning" a career, and for 38 years her practicality, good judgment, and sound common sense have given a term previously regarded as a dirty word a stature and degree of respectability it had not enjoyed before. That this is true is borne out by the accolades she received from every state in the Union when she recently stepped down as executive secretary and principal coordinator of the American Planning and Civic Association, with its Committee of 100 on the Federal City, and the National Conference on State Parks.

How did she prepare for what must be regarded as a pioneering

"I Must Say . . ."





Photo Studies by Vince Finnigan



Harlean James is a remarkable woman. AFA doesn't always agree with her, but her good judgment and plain horse sense have given the word "planning" new stature in America

type of career? She started out to be a history teacher when she enrolled in Stanford in 1894 where her classmates included William and Arthur Greeley, Carl and Sally Hayden, and Mr. and Mrs. Herbert Hoover. There she came under the influence of a great history professor, the late George Elliott Howard. "He made me realize that *events* are caused by *people*—that *people* decide things," Miss James says. "And that is something I've never forgotten."

One of the interesting things about conservation is that so many different elements, coming into the field through different doors and on different routes, have exerted an influence on its development. The advent of the "park planner" and "landscape architect" was accentuated in 1897 when the American Park and Outdoor Art Association was formed at Louisville, Kentucky. Even then the population shift from rural to urban areas was on, and men of vision saw the need not only for a national system of parks but also for state and municipal parks

on a scale considered ridiculous by many so-called "sound" people of that era.

Meanwhile, Miss James was pursuing her history studies at Stanford and following her graduation set out for Honolulu where she became a court reporter, a federal secretary in the U. S. Customs Service, and corporation secretary of the J. B. Castle companies. Several years later found her with a farm in Maryland where she settled down to the task of "farming it" in earnest. Then Dr. James H. VanSickle, superintendent of schools in Baltimore, and his wife, whom she had known in Denver, came to ask her to consider the position of executive secretary of the newly organized Women's Civic League. They said, "Put on your best clothes and your best smile and meet the committee at the Belvedere."

Miss James did so and got the job, little realizing that the move represented a step that would result in her "collision" with some very interesting events. Her next move a few

years later brought her to Washington and into the housing field. In the period from 1917 to 1920 she held down three jobs in rapid succession as secretary of the Housing Committee of the Council for National Defense, executive secretary of the U. S. Housing Corporation of the Department of Labor, and general manager of the Government Hotels for Women. She recalls her association in the Housing Corporation with Frederick Law Olmsted, whom she had first met at the Philadelphia Planning Conference of 1911 which also was addressed by Senator Francis Newlands. When she first came to Washington for the Council of National Defense she was much impressed that a letter addressed to "Miss Harlean James, Washington, D. C." was duly delivered. She accepted the position of general manager for the Government Hotels for Women reluctantly. But the officials of the Housing Corporation wanted to install an accounting system that would show day-to-day expenses and progress towards balancing the budg-

et from receipts of the paying guests. They said: "If you will take on the job, we will back you right or wrong, but we hope that you will be right as often as you can." She closed her first year with a modest surplus for the federal government.

Meanwhile, events were moving swiftly in the "planning" field. The creation of the National Parks System had given new impetus to park planning everywhere. Earlier, a merger in 1904 at St. Louis of the old Louisville group with Prof. Charles Zueblin's American League for Civic Improvement resulted in the formation of the American Civic Association. Many eminent leaders were now appearing in the new field, including J. Horace McFarland, John and Frederick Law Olmsted, Charles W. Eliot of Harvard, Liberty Hyde Bailey, Harland Bartholomew, novelist Zona Gale, newspaperman Tom Wallace, and Charles Mulford Robinson. "Action" was the war cry of the young group, and papers and reports on "zoning" and "planning" began to appear in towns and cities across the nation. One of these, "City Planning," by Mr. Olmsted, is still regarded as a classic.

Thus Miss James moved into the mainstream of city and park planning, where she has remained ever since. "In the Civic Association," she explained, "we have always concentrated on our planning, park, and conservation programs. It was Dr. McFarland, with the assistance of Frederick Law Olmsted and Henry A. Barker, who led the educational campaign for the creation of the National Park Service by Congress in 1916." Since every organization has a problem of financial support, Miss James explained that she had been fortunate when Nelson P. Lewis took her to see John M. Glenn of the Russell Sage Foundation. Over a period of 25 years, the Sage Foundation made available to the Civic Association nearly a quarter of a million dollars. But whatever the income of the association was, Miss James always sought and achieved a balanced budget.

"I've always had a feeling that women are actually better economizers than men," she confided. "Women know they must secure the money before they can spend it. But I have been fortunate to work with four really great presidents in Dr. J. Horace McFarland, Frederic A. Delano, Horace M. Albright, and General U. S. Grant, III."

We will not attempt to describe the complete evolution of the program in this limited space except to

say that further mergers resulted in the formation of the American Planning and Civic Association in 1935.

In addition to strong planks for federal forests and parks, the association program states that "We work for the extension of comprehensive town and city planning and urban redevelopment, including zoning which will promote protected commercial and industrial areas and residence neighborhoods of workable size, shape and location to make possible adequate housing and amenities for all citizens. We urge adequate parks, parkways and playgrounds, planned street, highway and transit systems, including Federal and inter-regional thoroughfares across urban areas which conform to the comprehensive city plan. We maintain that areas once dedicated as parks should not be appropriated for unrelated uses.

"We favor the planned provision and adequate maintenance of street trees in cities and towns and we urge the use of landscape architectural advice in cooperation with engineering supervision in the installation of underground and overhead utilities," the association's platform continues. "We believe in regulation of signs on commercial structures, the abolition of billboards from residence neighborhoods, in the vicinity of parks and public property, and the restriction of outdoor advertising in any place where it will detract from the appearance of buildings and grounds or injure the value of surrounding property.

"We advocate coordinated plans for Federal, State and local public buildings and the establishment of municipal art commissions to pass upon the plans of public structures and private buildings facing buildings and grounds." Here, then, are the broad base and aims of the program as outlined on a national pattern by the association.

In the early Twenties, Miss James succeeded in persuading Frederic A. Delano to organize the Committee of 100 on the Federal City as a working committee of the Civic Association. Today, under the able leadership of Admiral Neill Phillips, the committee continues its activities to foster a planned national capital and to stress the responsibility of the federal government for its Federal City. Indeed, it was on the initiative of this committee that the legislation creating the National Capital Park and Planning Commission was adopted by Congress in 1924-26.

Miss James is a believer that planning is a staff function which should

not be compromised by entangling alliances with *line* agencies which in the end must put plans into effect. She has advocated these principles in comment on the final report of the Joint Committee on Washington Metropolitan Problems of which Senator Bible is chairman. She advocates the maintenance of the Federal City and the federal planning commission for the metropolitan region as well as for the District of Columbia.

In 1935, the American Civic Association merged with the National Conference on City Planning to form the American Planning and Civic Association which in turn was asked to serve as a secretariat for the National Conference on State Parks. Thus, the combined problem includes planning and parks at each level of government.

Miss James has a big following among foresters, including some who have not always agreed with her entirely. Nor has she always agreed with them, we were to learn.

"I must say, the foresters are truly remarkable," she said. "They have literally carved out an empire and preempted it. If some of us are a little jealous of this educational edifice they've built, you shouldn't mind. Frankly, I don't know if the rest of us will be able to duplicate it. The foresters have plowed straight ahead fast and hard and they've taken the public along with them, *most of the time.*"

Most of the time, we asked?

"Well, yes," Miss James replied. "We're all human, of course. But have you ever noticed that our most energetic leaders sometimes seem to have what to some of us, at least, seem to be certain blind spots? For instance, Pinchot, great as he was, had his Hetch Hetchy. Most of us still think he was wrong about that, and I never go out to Yosemite without thinking what a tragedy it is we lost that wonderful area.

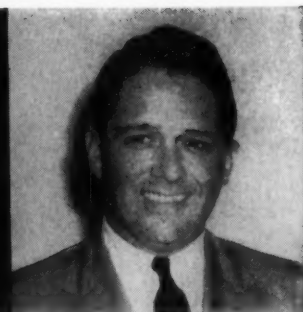
"Now, Will Greeley and I did not see eye to eye on the question of Olympic National Park," she continued. "I went to school with him you know, and I liked and respected him. One time when I went out there I found a note from him at the Olympia hotel where I was staying. He wanted me to have dinner with Mrs. Greeley and himself.

"When I asked him how he knew what hotel I was stopping at, he told me, 'I didn't. So I left a note for you at every hotel in town.' You know, of course, how charming he could be. Well, he wanted me to

(Turn to page 54)

Reading
about

RESOURCES



By MONROE BUSH

CARHART ON NATIONAL FORESTS

ARTHUR H. CARHART is one of the half-dozen most entertaining writers in the resource field that this country has produced. Each of his books is extraordinarily readable. His most recent work, *The National Forests* (Alfred A. Knopf, N. Y. 1959. \$4.75), is by all odds the most "popular" book on the subject—popular, that is, in both concept and treatment, and sure to be popular at book stores and libraries.

Without doing any violence to the facts, Carhart can and does take the duller aspects of a subject and give them astonishing appeal. His discussion of white-pine blister rust, for example, is as interesting as it is brief, and the simple clarity of these several paragraphs will stick with the reader long after the book is closed. That is true of virtually everything Carhart has to say: It is uncommonly memorable.

The first chapter, "Our Forest Heritage," runs for fifty pages—20 per cent of the book—and attempts too much. It is a good general introduction to the subject of national forests, but sweeps too thin over topics that warrant and require more complete treatment.

The remainder of the book is composed of ten chapters that deal individually with the regions of the national forest system. It is here that Carhart is splendid. His orientation of the reader to each region, its history and distinguishing characteristics, its charms and especially its values, is educational in the very best sense.

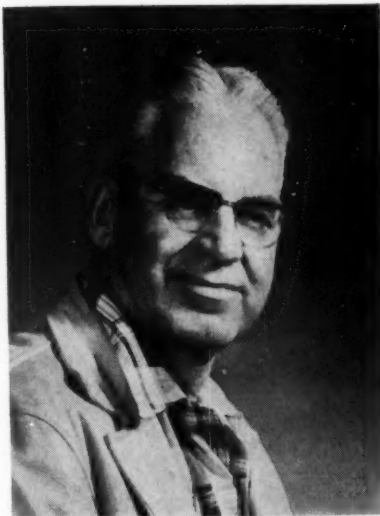
The amount of material utilized for a book of this sort is amazing. Certainly beneath the glib appeal of Carhart's easy sentences there must lie many years of research. And be-

cause of this, even professionals will read him with thanks and pleasure.

Choosing the phrase "dominant use" in preference to "multiple use," Carhart cites timber growth, watershed protection, forage use, wildlife development, and recreation as the proper purposes to which the national forests must be put. Throughout the book he returns again and again to these various roles of the national forests, and it is soon apparent that watershed protection appears very large indeed in his estimation, and that recreation is judged to be the fastest growing use which may, in time, dominate all others—or the other uses with the exception of watershed protection.

The National Forests is by no means a definitive book. There have been better books in this field, and

Arthur H. Carhart is considered one of most popular writers in resource field



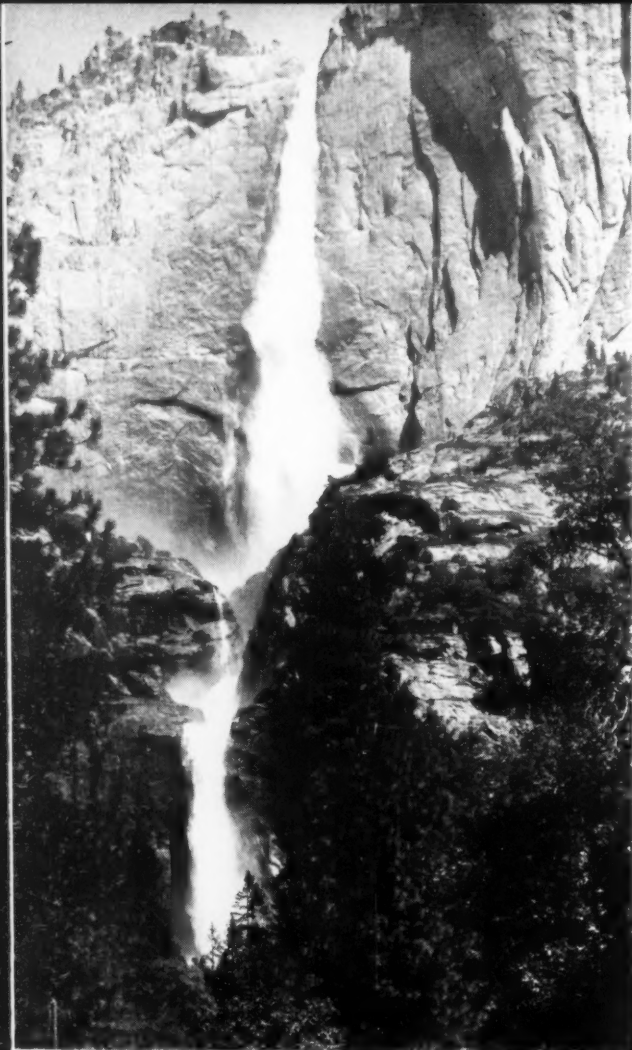
there will be better ones to come. But make no mistake about it: *The National Forests* is a good book, and certainly the most entertaining introduction to federal forests that has appeared in print. Of its many uses, one should be as required "parallel" reading for college students of general courses in American history. How can such a book be called to the attention of those professors of American life who do not yet know the importance of our national forests within the entire land-use pattern of the nation?

NEW AND TO NOTE

True stories concerned with the lives of individual animals have little value in the larger resource picture. It is doubtful that such stories contribute anything of consequence to wildlife management. They appeal to our simple love for living nature, exciting our sentimentality and stretching our credulity.

But this is not to dismiss them as irrelevant or unworthy. Devotees of the "true nature story" are zealous devotees indeed, a fraternity comparable in single-minded enthusiasm to who-done-it readers. Both are effective escapes, but of the two the nature story is the more relaxing, the more inspiring, and in virtually every case the more decent. It has had a place in the literature of every culture in every age. It is a substantial though minor category within our own American literature.

The new *Audubon Book of True Nature Stories*, edited by John K. Terres and illustrated by Walter W. Ferguson (Thomas Y. Crowell Co., N. Y. 1958. \$5.00), is a major contribution.
(Turn to page 57)



The Crisis in OUTDOOR

By MARION CLAWSON
Resources for the Future, Inc.

PART II

"From the mountains, to the prairies, to the oceans white with foam . . . God bless America . . . and let's save some of it"

Last month Mr. Clawson reviewed the outlook for outdoor recreation in the United States. He concluded that by the year 2000 a combination of growing population, rising family incomes, and increases in leisure time and travel might raise the total demand for outdoor recreation to about ten times the present level. He also suggested that the pressure of the over-all increase will be felt quite differently among the three main types of recreation land; with perhaps a 4-fold rise for user-oriented areas like city and county parks, 16-fold for such intermediate areas as state parks, and as much as 40-fold for resource-based areas like



RECREATION



the national parks and national forests whose outstanding qualities draw people all over the country.

FROM all indications the present congestion in the national forests, national, state, county, and city parks, and other outdoor recreation areas is not a case of temporary growing pains, but rather a mild taste of a real crisis.

What are some of the specific, immediate problems growing out of the snowballing demand for outdoor recreation? What can we do about them? What are the prospects of success?

To tackle the last question first,

I believe that the prospective huge increase in recreation demand *can* substantially be met, though probably not entirely, and certainly not altogether in ways that most of us are used to and would prefer. Only through fortunate coincidences of history and geography have we in this country been able to make such gains in population, prosperity, and urbanization without, until quite recently, feeling a squeeze on open space. Now that events have caught up with us we must pay the price of maturity—greater costs (whether borne by individual users or by all the taxpayers) and greater formality in arrangements. Never again will

it be as easy as it used to be to go outdoors and get away from it all.

Within these limitations it still should be possible to satisfy at least the greater part of the coming demand for outdoor recreation, without too oppressive a system of regulations. But this can't be accomplished automatically by going along as we are now, or even by stepping up the scale of present efforts. Today's activities, useful as they are, are not only too small, but too scattered. The greatest need of all is for a more co-ordinated attack on the whole problem of outdoor recreation.

The best way to grasp the necessity of a comprehensive approach



Private forest lands are a potential recreational asset of great value, and their intelligent use can do much to meet the anticipated future requirements



Utilizing available space, playground was built under a bridge in New York

is to look first at the various pieces of the total situation. This method may sound like a paradox, but it will show better than any other way that there is no satisfactory separate solution to the worst of the trouble spots.

First, let us glance at the prospects for user-oriented recreation areas—the city and county parks that are designed almost entirely for the use of people living quite nearby, usually in densely settled communities. There are about 750,000 acres of such land today. Under the standards agreed upon by most park specialists, about twice as many acres are needed now to take care of present demand in anything like an

adequate manner. Assuming a four-fold increase in demand, about five million acres would be needed in the year 2000. Between 1950 and 1955 new lands of this kind were being acquired at the rate of about 20,000 acres a year. Even if this rate were to be sustained for the next 40 years, less than one fifth of the necessary new land would have been acquired.

A big jump in purchases of user-oriented recreation land is clearly called for. This is especially true because of the special needs of the fast-growing suburbs that have sprung up around the built-up cores of older cities. Beset with pressing problems of schools and paving and

Few of the fast-growing suburbs have provided space for public recreation



sanitation, few of the new suburbs have done much about providing public space for recreation. With each passing year the land that might be bought for parks grows scarcer and more expensive. It may well be that the combined acreage of city and county parks will not be expanded to 5 million or even 3 million acres by the year 2000. Suitable land in or near many of the older cities is simply no longer available. Fortunately, not all of the prospective demand will have to be met by adding space. Much pressure can be taken off by additions and improvements in special facilities like swimming pools, small children's playgrounds, baseball diamonds, tennis courts and the like, and by better scheduling and supervision of play. If people are willing to pay the cost—which will be considerable, with new land averaging perhaps several thousand dollars an acre to buy and perhaps equal sums to improve—a combination of more land and improved facilities should enable us to keep up pretty well with the demand for user-oriented recreation areas.

Second, there are the intermediate recreation areas. These comprise about 9 million acres—5 million in state parks and 4 million used for recreation in federal reservoir areas. At least another million acres, and perhaps as many as 5 million, are needed now to meet fully the present potential demand. (This is a particularly hard estimate to hazard, because the national totals hide so many regional differences; some parts of the country have more than enough of the intermediate type of recreation land to fill current needs, while other sections are critically deficient.) A demand in the year 2000 of 16 times the present level would not bring a need for 16 times as much intermediate recreation land, which is just as well, for the multiplication works out in the neighborhood of 200 million acres. But a total of 70 million acres would not seem to be excessive, and 35 million acres would be a rock-bottom minimum, calling for far more careful scheduling and intensive use than we have today.

The chief impediment to filling

the demand for this kind of public recreation land is cost, for the requirements of type and location of acreage are not excessive. Although scenic beauty and other natural advantages are desirable, almost any kind of land will do. With the aid of a few dams to make artificial lakes, and some plantings and other simple improvements, land that is of low value for either agriculture or forestry can be made into quite acceptable sites for all-day picnics, swimming and boating, overnight camping, and other "intermediate" recreation uses. And, since there is so much flexibility in selecting locations, the actual cost of land might be only \$300 to \$500 an acre. If we really want to, we can meet the need for intermediate recreation areas.

For the third category—the resource-based recreation lands—the story is entirely different. Here the prospective increase in demand between now and the year 2000 is the greatest: perhaps as much as 40 times the present level. But the possibilities of increasing present acreage are decidedly limited, be-



Special facilities like tennis courts in McMillen Park, Fort Wayne, will help to alleviate pressures



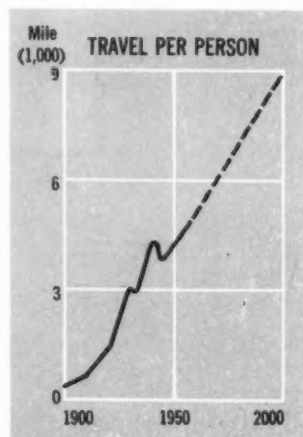
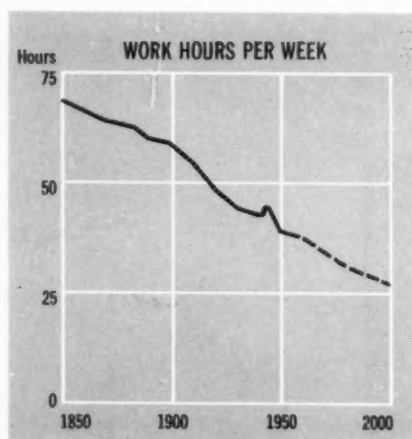
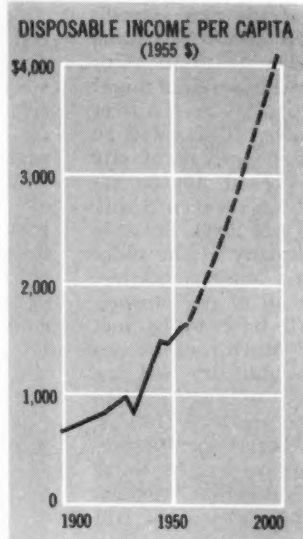
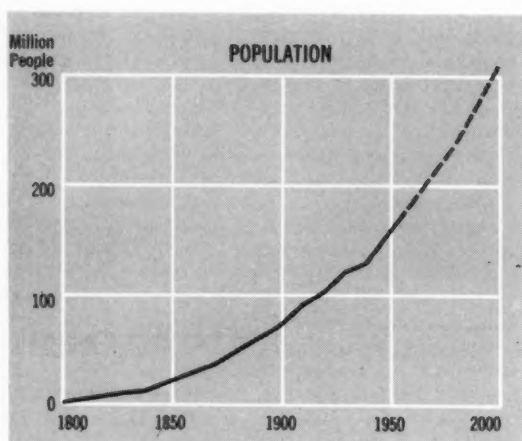
Tennis courts of McMillen Park, at left, are converted into skating rink for winter activities

Enterprising citizens of Fort Wayne developed park (photo at right) from this desolate area



Psi Ote Park, now complete with pavillion, is fine example of what a community can accomplish





Raccoon is symbol of Penna. Forestry Assn.'s Good Outdoor Manners program

cause the bulk of the lands of outstanding natural beauty or historical interest are already in federal reserves and potentially available for recreational use. (In the West, much of the land in private ownership, in national forests, and even in national parks is nearly identical in character and appearance.) The total amount of federal land devoted primarily to recreation now comes to about 40 million acres. This includes all of the national parks system—nearly 25 million acres—and around 14 million acres of the national forests (about 62,000 acres of improved camp and picnic sites, with the rest studiously unimproved wilderness areas). In addition, the remaining 165 million acres of national forest lands are open to recreationists, and are increasingly used for that purpose. About half of the 60 million visits to the national forests last year

were to areas not formally set aside for recreation.

In recent years there have been small gains in acreage of the national park system, and small net losses in total acreage of the national forests. Any large future increase in either class of lands is unlikely. Even if there should be a substantial increase in Park Service funds for buying new land (the present figure is only \$1.5 million a year), the net additions to resource-based recreation land still would be a drop in the bucket. Whatever additions are made will probably be either for buying up privately-owned pockets within present boundaries of national parks and monuments or for acquiring some of the few miles of ocean beach that have thus far been overlooked in active private development. No matter how hard we try, it is difficult to see how more than 10 to 20 million

acres can be added to the present total of 230 million acres of public land potentially available for resource-based recreation.

And this is not all. The recreation lands where the increase in demand will press most heavily are, by reason of their unique qualities, the very ones that will suffer most through overcrowding. Suppose that somehow it were physically possible to get 40 times as many visitors in and out of the resource-based recreation lands; long before that unlikely goal could be reached, the special attractions that draw people to the parks and forests would be gone. The one-time grandeur and quiet, the sense of being close to nature, would retreat in the face of paved roads and parking areas, trodden vegetation, and human bustle. And I am not considering here the specialized problem of preserving truly primitive areas, which in itself, as every Congressman knows, is no mean question, with important values at stake on both sides. I am thinking rather of the lands intended for wider use.

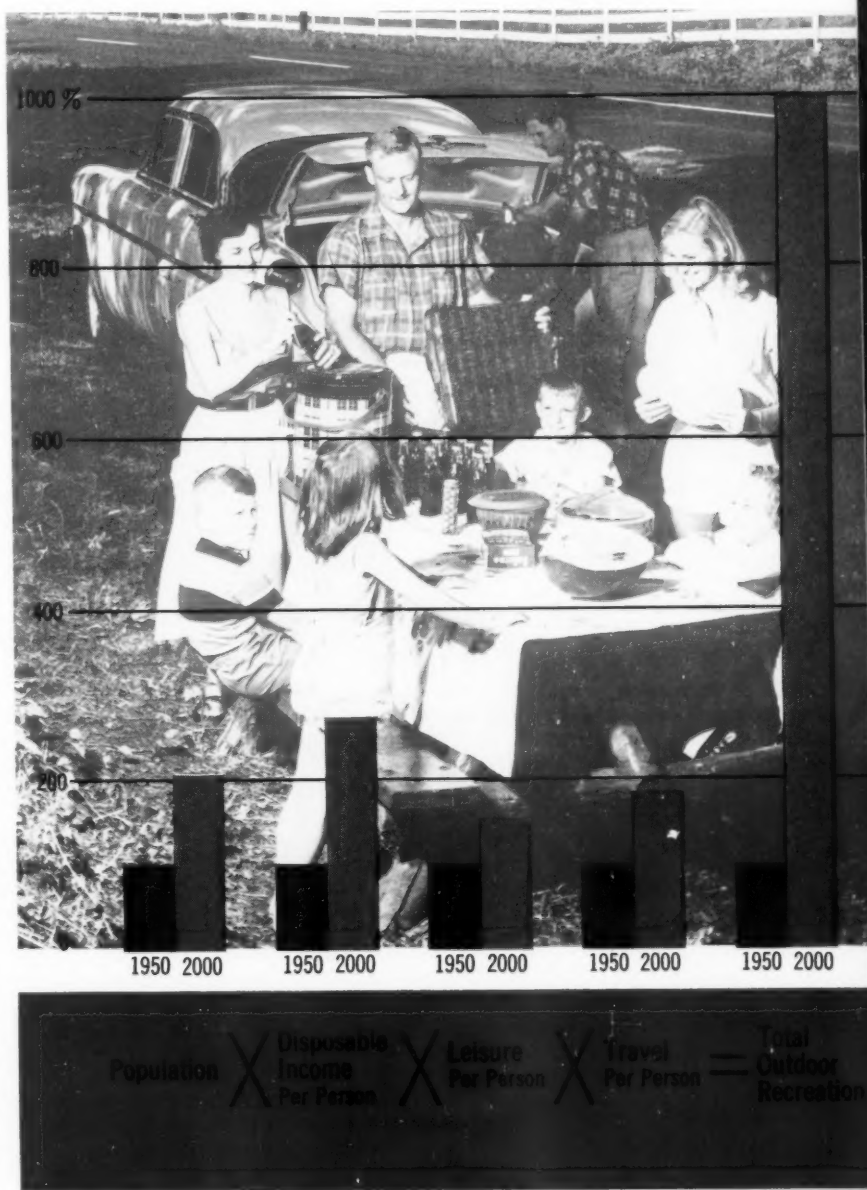
Defenders of the parks and forests are constantly on guard against the threat of mining, lumbering, and other commercial exploitation of our best-grade recreation lands. There has been justification for these fears and there still is, though not as much, I think, as in the past. The greatest threat in the future will come from the recreationists themselves. Overuse can ruin a recreation area as thoroughly as a bulldozer, partly through actual physical damage (though there the bulldozer is more efficient) but mostly through destroying its capacity to provide intellectual and emotional experience. Those of us whose memories run back 30 years or so have seen how crowding has changed some of the nation's best-loved recreation spots—Grand Canyon, where attendance increased 15 times between 1920 and 1956; Yellowstone, where the gain was 18 times; Glacier, where it was 33 times; and many others. What will be the effects of increases to 10, 20, or 40 times present levels?

Since the resource-based lands are so clearly going to be the real trouble spot of the future, it might seem best to concentrate our planning and action on these lands and let the rest take care of themselves. That is what many people do think, and there is much common sense in their instinct. Nevertheless, it seems to me that the only way out of the grow-

ing dilemma is a comprehensive effort that will include all three categories of recreation land.

To be sure, there are many things we can do about the resource-based lands themselves. For example, we can undertake further development work on a considerable scale. While a comparatively few famous areas in the parks and forests suffer from overuse, there are other potentially attractive areas that are hardly used at all. But there are strict limits to this kind of expansion. There are not many sites that can be heavily used, and even they must have wide buffer zones of land where people are scarce. Furthermore, recreation is sometimes incompatible with other

essential uses, to which preference must be given in the over-all public interest. Secondly, we can do more to space out use of recreation lands over the year instead of bunching it up in short summer seasons. Rising interest in winter sports and all-weather camping already is bringing some improvements, but here again the possibilities are limited. Thirdly, we can put top limits on attendance in the areas that are under the greatest pressure, either by requiring reservations in advance or by simply closing the gates whenever capacity is reached. Defenses of this kind are probably inevitable for some areas, but as a wide-spread policy such rationing of top-quality





National Park Service ranger conducts group of youngsters on tour of Mt. Rainier National Park. These organized nature trips appeal to children



These children are fortunate enough to live in a community where a playground is provided, but in many older cities there is just no land available for these needs

outdoor recreation would be little better than an admission of defeat, and hence no solution at all.

Another way to ease the pressure is to make more recreation use of private lands. One hopeful sign is the way that the large timber-owning companies are opening areas to vacationists. At least 65 of these firms maintain at least 137 private parks. No doubt there are more; complete statistics have never been gathered. Some public utility companies also provide parks. More of this kind of thing can be expected, partly because of its sound public relations value but mostly, perhaps, because of a real sense of public obligation felt by owners of large tracts of good recreation land. But there are limits to such expansion; only a relatively

few private landowners can afford such a sense of *noblesse oblige*. Most of the smaller owners, who hold most of the private land, are not in a position to provide campgrounds and other facilities for public use. Also, the person who freely offers the use of his acres for hunting, fishing, or other uses runs real risks of damage to the land or its resources.

Does the public have a right to expect access without charge or for only a nominal fee? Perhaps ways can be devised, either privately or with the assistance of local or state governments, by which associations of sportsmen or other recreationists can make fair arrangements with groups of landowners for specified uses of good recreation acreage.

Between them, these two ways of

expanding recreation on private lands may be equivalent to adding many million acres to the resource-based public lands. But there is little chance that such gains will fill more than a minor portion of the total increase in recreation demand. By far the greatest present use of private lands is in small tracts off in the woods or on lake or ocean shores. This kind of use is becoming more and more expensive. Even if it did not dwindle, it would not meet much of the new need for space, for in terms of persons served per year it is an extremely inefficient use of recreation land.

So the quest for a large-scale solution comes back to public land. And it is painfully clear that the measures we have mentioned, though useful and necessary, won't be enough to do the job.

Suppose that instead of looking just at the resource-based public lands, we look at all public recreation land; then the future prospect is not nearly so gloomy. As we have seen, the acreage and capacity of the intermediate recreation areas like state parks can be increased by just about any amount the American public is willing to pay for; and considerable expansion of user-oriented areas, at least in the form of county parks, is also possible. If the potentialities of these two types of areas are developed to the full, the distinctive resource-based areas will be freed to perform the task for which they are uniquely fitted, instead of also bearing, as they do today, much of the load that the user-oriented and

intermediate recreation areas could carry.

Most of the answer to the critical problem of the national parks and national forests lies in improving the capacity of *all* recreation lands. This is our best hope of not being swamped by the rising tide of recreation demand. That is why the city and county parks, which usually are considered as quite a separate problem of urban development, and the state parks, which sometimes are considered separately, have received so much attention here. That is why, too, the comprehensive approach is essential to meeting the outdoor recreation problem of the future.

By the "comprehensive approach" I do not mean rigidly centralized planning and administration. Far from it. There always will be room for separate responsibility and initia-

tive by local, state, and federal governments, and by private groups. That is part of the American pattern. What I do mean is that the various agencies and groups need to be more aware of the total situation for outdoor recreation, and more responsive to it. Although in many instances—but not all—there is friendly cooperation between workers in the recreation vineyard, each of the many units is naturally digging in its own backyard, and sometimes the dirt flies over into the neighbor's plot. The National Park Service, for example, must always consider its own legislative charter. So must the Forest Service, the Corps of Engineers, and other federal agencies. The various state agencies must think first of their own electorate and legislature. Most of the private groups have special clienteles with particular in-

terests. Corporate and individual landowners usually have objectives which may be incompatible with recreation. Lost opportunities are the inevitable results. This is too bad, for the family planning a vacation or week-end outing doesn't care whether the facilities are provided by federal, state, or local governments or by private owners. They want to have a pleasant time outdoors within the limits of their budgets of time and money.

As one example of how a better approach would help, let us take a look at how recreation acreage is distributed throughout the country and at how the present locations compare with current and future patterns of population. Less than a quarter of the cities have enough nearby recreation space. The shortage is especially marked in the South. A great many states don't have enough intermediate recreation areas. Here, too, portions of the South are in a particularly bad way. But so also are several of the mountain states, probably because they rely so heavily on the national forests and national park areas. More than 80 per cent of the federally owned resource-based areas are in the West, where only 13 per cent of the people live. By the year 2000 there will have been a westward shift in population; although the Northeast and North Central regions will have more people, they will have a smaller share of the national total. But more important than regional shifts is the prospect that most of the increase in population will be urban. Large cities from southern Maine to northern Virginia will form an almost

(Turn to page 61)



In densely populated communities even small areas of land must be utilized for playgrounds as less than a quarter of our cities have enough nearby recreation land

Even in 1927 the cars were bumper-to-bumper at entrance to Yosemite Park



OPERATION



Bynum community pond, a joint Game Commission-Roads Department project, becomes an ideal skating rink in winter

OUR national network of new highways can be a wide road to fishing happiness. Every small creek or spring sump crossed by a highway is a potential pond site, with the earthen road fill used for the dam.

The eye-catching 35-acre Urieville community lake alongside U. S. Highway 213 near Chestertown on Maryland's fertile Eastern Shore is an example of what can be done. Observing that the fill for the pending road relocation could be used

to restore a millpond broached by flood waters many years ago, the Maryland Game and Inland Fish Commission set up meetings with the state roads commission, local sportsmen, and community leaders. This action provided the needed spark, and many groups and individuals soon were seeking to cooperate in the pond restoration.

Planning and construction soon transformed inspiration into fact. What for many years had been a swampy, brushy bog now is a fine

roadside pond, easily accessible for fishing, boating, and picnicking. Migrating waterfowl dot its surface in the spring and fall; some raise broods there. Boats are rented at a nominal fee by a chartered concessionaire, and state highway crews maintain spotless tables and grills in the developed picnic area.

Urieville Lake has still another facet that endears it to the community. Last summer it withstood hours of torrential rains, stemmed the rush of water into nearby

A construction crew works on the concrete facing that will prevent the water of Urieville Lake from damaging the highway fill



Culvert passes the excess water from Urieville Lake under U.S. highway 213



N FISH POND



Photos by David J. Smith, Maryland Game and Inland Fish Commission

for
Mi-
e in
raise
at a
nces-
rews
rills

ther
mu-
ood
med
arby

streams, and reduced the flood crest that caused damage and misery in the Chestertown area.

The opportunity to create new fishing and recreation waters is limited only by the effort that sportsmen's, civic, and other groups are willing to put forth. The best way to get the ball rolling is to bring together two primary agencies, the state game and roads departments. Since both are interested in public service, little more than an invitation is needed to induce them to meet.

By DANIEL A. POOLE

All units of government made a record funds outlay for roads in 1958. Construction is at an all-time peak. The recently enacted 13-year federal interstate highway system involves 41,000 miles of new roads, and Congress already has committed some \$25.5 billion for the work. The states also are putting large amounts into road construction. If ever the

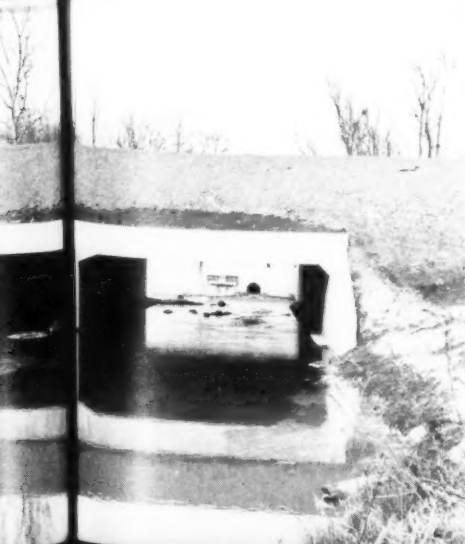
time was right for promoting road-side ponds, it is now.

With planning and construction done as part of the road job, ponds can be built at bargain-basement savings. Urieville Pond would have cost \$100,000 if undertaken solely by the Maryland game department. But by cooperating with the roads people, and by using highway fill for the dam, the total project cost was less than \$40,000. The actual expense to the game department was

(Turn to page 44)

Thirty-five acre Urieville Lake offers wide variety of recreational opportunities. This couple hopes to catch bass, bluegills, crappies, pickerel

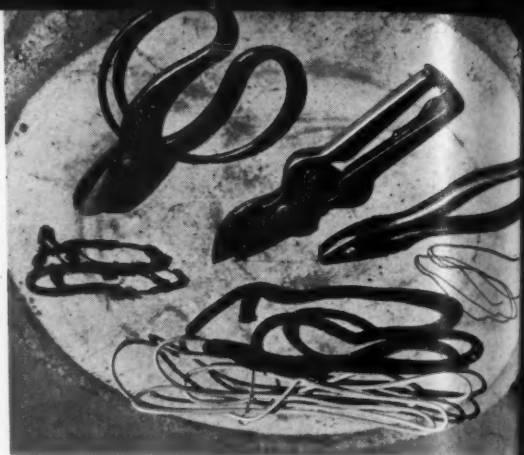
om
213



By JACK B. KEMMERER

Only tools required for bonsai work are: different gauges of wire, pruning and clipping shears, pliers

Jack Catlin holds a 15-year-old piñon tree, the trunk of which has doubled in thickness since planted, but height remains same





Two-thirds of the soil is removed from the roots. Loose roots are trimmed off



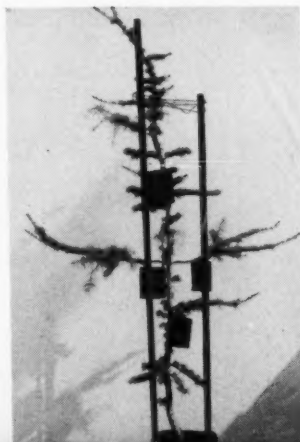
Root-trimmed tree will next be re-potted in same container with new soil. Tree has room to grow new roots and it will remain in healthy condition.

Little OAKS from Big ACORNS

In the yard of Jack Catlin's home in LaCanada, California, stand hundreds of trees—evergreens, fruit, and shade trees—and they would make a forest but for one thing: The tallest is only about 30 inches high. Jack raises dwarf trees, an art begun in ancient China and later refined in Japan. He dwarfs them by planting them in shallow pots with only handfuls of soil and keeping the root system so small that the tree's ability to absorb nourishment is severely limited. Although some of the tiny trees may live for hundreds of years, not one will ever grow to normal size.

For several thousand years the Chinese, Japanese, and other Orientals have made a hobby of cultivating dwarf trees. The Japanese perhaps have carried the art to its greatest perfection, and one sees miniature trees everywhere in that country. Orientals hold that while it may be man's unfortunate lot to dwell in cities, he may, by the daily association with dwarf trees, be kept aware of nature and so find a renewal of

(Turn to page 46)



SECRETARY of the Interior Fred A. Seaton announced last month that the department's Conservation Service Award has been conferred this year upon The American Forestry Association; Dr. and Mrs. Harold S. Colton, of Flagstaff, Arizona; Albert L. Connel, of Anadarko, Oklahoma; and Pat Gray of the Cheyenne Agency, South Dakota.

The award is given to individuals and groups outside the federal service for outstanding achievements in the field of conservation.

The American Forestry Association was honored for the important role it has played in the initiation and modification of conservation legislation in order to provide better tools by which the department can manage the nation's vital natural resources, and for assisting in creating an enlightened public understanding and appreciation of the various problems incident to the management of the public domain, the national parks, the wildlife refuges, and Indian lands.



United States Department of the Interior CONSERVATION SERVICE AWARD

In recognition of honorable contributed services performed in connection with this Department's conservation activities

*American Forestry Association
is hereby awarded this certificate*

Given under my hand and seal this 20th day of Feb. 1959

*Fred A. Seaton
Secretary of the Interior*

Interior Award for AFA



THE SECRETARY OF THE INTERIOR
WASHINGTON

February 20, 1959

Gentlemen:

It gives me pleasure to grant to the American Forestry Association the Conservation Service Award of the Department of the Interior, in recognition of the Association's outstanding contributions to the field of natural resource conservation.

For over eighty years, the American Forestry Association has represented the citizens of our Nation in the wise use of our natural resources. The important role it has played in the initiation and modification of conservation legislation in order to provide better tools by which the Department can manage the vital natural resources is noteworthy. By assisting in creating an enlightened public understanding and appreciation of the various problems incident to the management of the public domain, the national parks, the wildlife refuges, and Indian lands, the Association has materially aided the Department's efforts toward attaining the most beneficial resource conservation programs in the public interest.

The Association can look with pride on the contribution it has made to the American scene, and in recognition of such contribution this award is presented with my deepest appreciation.

Sincerely yours,

Fred A. Seaton
Secretary of the Interior

American Forestry Association
919 Seventeenth Street, N. W.
Washington 6, D. C.



FOUNDED 1872
THE AMERICAN FORESTRY ASSOCIATION
919 SEVENTEENTH STREET, N. W. WASHINGTON 6, D. C.

February 26, 1959

Honorable Fred A. Seaton
Secretary of the Interior
Washington 25, D. C.

Dear Mr. Secretary:

We acknowledge your letter of February 20 and humbly accept the Conservation Service Award of the United States Department of the Interior. You have done great honor to The American Forestry Association and we are further encouraged to accelerate our efforts in promoting the conservation and wise use of our renewable natural resources.

I shall take great pleasure in formally notifying our President and our Board of Directors of this honor you have bestowed upon us.

Sincerely yours,

Fred E. Hornaday
Fred E. Hornaday
Executive Vice President

Put the "INDIAN SIGN"

On That Next Fire

INDIAN FIRE PUMPS have been top on the totem pole since 1925. Many pumps 20 years old are still in active service. Designed right—built right, **THERE IS NOTHING LIKE AN INDIAN**. Two models to choose from—*both meet Underwriters' Laboratories specifications*. Remember the name and remember the quality—and always buy **INDIAN FIRE PUMPS**.



**No. 90 INDIAN
Sliding Pump Type**



**No. 80 INDIAN
Lever Type
Pump & Handle**



*Write for
new catalog*

*The "One Man
Fire Departments"
that are "worth
their weight in
gold"*



**No. 90 INDIAN
Sliding Pump Type**

**Both Types
Underwriters
Approved**

**No. 80 INDIAN
Lever Type Pump & Handle**

**Many In Use
After 20 Years
of Service**

D. B. SMITH & CO. "FOR SEVENTY YEARS
THE LEADERS"

405 Main St., Utica 2, N.Y.

Pacific Coast Branches:

Hercules Equipment & Rubber Co., Inc.
San Francisco 7, Calif.

Halgrin Supply Co.
Los Angeles 15, Calif.

Fred E. Barnett Co.
Portland, Ore.

Fred E. Barnett Co.
Klamath Falls, Ore.

Mill & Mine Supply Inc.
Seattle 4, Wash.

L. M. Curtis & Sons
Salt Lake City, Utah

Canadian Agents:
Fleck Bros. Ltd.
Vancouver, B. C., Canada
C. E. Hickey & Sons, Ltd.
Hamilton, Canada

TRAIL RIDERS OF THE WILDERNESS



1959 Expedition Schedule

HIGH UINTAS WILDERNESS, UTAH

JULY 7 TO JULY 17
\$230 from Vernal, Utah
Party limited to 20

QUETICO-SUPERIOR WILDERNESS, MINNESOTA—(Canoe Trip)

JULY 14 TO JULY 23
\$210 from Ely, Minnesota
Party limited to 17

WIND RIVER MOUNTAINS, BRIDGER WILDERNESS, WYOMING

JULY 14 TO JULY 25; AUGUST 4 TO AUGUST 15
\$250 from Pinedale, Wyoming
Parties limited to 25

MAROON BELLS-SNOWMASS WILDERNESS, COLORADO

JULY 24 TO AUGUST 3; AUGUST 4 TO
AUGUST 14
\$230 from Glenwood Springs, Colorado
Parties limited to 20

SAWTOOTH WILDERNESS, IDAHO

JULY 28 TO AUGUST 7; AUGUST 11 TO
AUGUST 21
\$230 from Ketchum, Idaho
Parties limited to 25

ANACONDA-PINTLAR WILDERNESS, MONTANA

AUGUST 3 TO AUGUST 12
\$230 from Butte, Montana
Party limited to 20

TETON WILDERNESS, WYOMING

AUGUST 10 TO AUGUST 21
\$250 from Moran, Wyoming
Party limited to 25

SAN JUAN WILDERNESS, COLORADO

AUGUST 11 TO AUGUST 21; AUGUST 24 TO
SEPTEMBER 3
\$230 from Durango, Colorado
Parties limited to 25

GILA WILDERNESS, NEW MEXICO

AUGUST 25 TO SEPTEMBER 4
\$250 from Socorro, New Mexico
Party limited to 20

MT. WHITNEY-HIGH SIERRA, CALIFORNIA

AUGUST 26 TO SEPTEMBER 4
\$250 from Lone Pine
Party limited to 20

PECOS WILDERNESS, NEW MEXICO

SEPTEMBER 7 TO SEPTEMBER 17
\$230 from Santa Fe, New Mexico
Party limited to 25

HORSEBACK TRIP IN THE GREAT SMOKIES

Enjoy ten wonderful days, May 20 to May 30, riding with The American Forestry Association in the Great Smoky Mountains National Park, North Carolina. The Cataloochee Ranch on Fire Top Mountain will be headquarters for seven daily rides to Sheepback Lookoff, Purchase Mountain, Paul's Gap, Balsam Mountain and other interesting points. In addition there will be a three-day pack trip from a base camp in the park, including a ride to the crest of Mt. Sterling.

Accommodations are limited to 20 riders. Make your reservations early and enjoy the superlative scenery, rushing waters, smoke-blue peaks and colorful blooms of laurel, iris, azaleas and dogwood. \$200 from Asheville, North Carolina.

Write or wire for detailed information, itineraries and reservations

919 Seventeenth Street, N.W.

THE AMERICAN FORESTRY ASSOCIATION

Washington 6, D. C.

April—Month of Firsts

(From page 21)

most fully-clothed trees are small clouds of light green leaf-substance haloed by a bright alloy of April wind.

Along the streams there is no end to water-birch greening rapidly with small fox-ear green leaves. The water-birch will soon be dressed. It is running a close race with the maple and elms that grow alongside the Sandy River banks and on those of her tributaries. There is a green quilt spread over the tops of the Little Sandy's bankside trees. But the stream willows along the Sandy River are barren yet. They leafed, like our W-Hollow weeping willow, at an earlier date and were killed. They beat all other trees but our weeping willow, and like it had awakened and proudly arrayed themselves too early this spring. Elm, water-birch, and maple are running a close race. The maple's dress is not as dark as the wahoo's and buck-eye's, but it has a thinner one with a lovely, delicate design.

Our sycamores, which are often called ghost-trees because they look so much like our imagined portraits of ghosts on the dark winter nights as we drive up the Sandy River road, are still naked, somber, and half asleep. But the April winds are shaking their tall bodies and the soft, warm rain is soaking down to their roots. April is very busy, trying to put life and breath into this beautiful tree, which, if it were human, would be a little thick in its thinking but could win beauty contests from its cousins who inhabit our rugged hills and deep valleys.

Yesterday, while I stood under a sycamore, I looked into the air around me. I thought I was in a cloud of flying ants. But flying ants didn't make this strangely-colored cloud. It was made of sycamore balls, the kind we used to gather to crush in our hands in the spring, then throw up into the air to let the wind blow the furze away. The wind was taking this winter decoration from these sycamores and sending it in all directions. This was a beautiful brown cloud the April wind must disperse before the sycamore leafed. This was a command Nature had given. One has only to go into the woods as I did yesterday and today to know about Nature's planning. The sycamore had only to get awake, then realize Nature's scheme and begin dressing.

Surprising were the clumps of spicewood along the streams that April winds had aroused very early by throwing rain drops in their faces. They had arisen promptly and began dressing for spring, laughing and chattering in the lukewarm winds.

We had gathered spicewood many autumns, winters, and springs when I was a child for medicinal purposes. We boiled the roots and bark into a tonic which we drank early in spring to give us new life and health. The spicewood grows not much higher than a man's head and in a big clump on one rootbase. There are often as many as twenty-five little trees in one clump. The spicewoods grow up to be a strong, durable family, very alert and much alive despite their short stature. Right now, the spicewoods are almost dressed for spring.

Everywhere the wild cherries are almost covered in their long green robes. Never before have I noticed they were among the first to break their winter slumber to dress and prepare themselves early for a season of summer growth. Then, the alders along the streams have leafed. And the ironwoods have awakened and they are halfway dressed. The dog-

woods always put forth their white blossoms first and then their green robes later. Right now they are a mixed green and white. Their green leaves look like little woodmice's ears!

All the trees on our hills and in our valleys have awakened. A few of them are yawning yet, as they have been aroused too suddenly by April winds from their long sleep. But this can be expected of trees the same as it can be foreseen of people.

The oaks, big, ruggedly lazy, have lain in bed the longest. They are bulky, clumsy, and slow at getting dressed. Those that grow high on the ridgetops, up where the air is light and thin, will be the last to dress. It will be sometime in May before they are fully ready to start their summer growth.

Right now all the trees must be ashamed of their winter's nakedness, for they are hurriedly getting into their leafy clothes. Soon their bodies will be hidden in flaunting gowns of bottle green. This finery of foliage, rippling robes of various patterns trimmed with scallops and laces, will soon clothe all the trees, hide old winter scars, and give a new, fresh look to the earth.

FOR SALE SOUTHERN PINE SEED

- Loblolly
- Slash
- Longleaf
- Shortleaf

*in wholesale quantities
for Direct Seeding*

**TREATED WITH RODENT AND BIRD
REPELLENT ON REQUEST**

*Write for simple planting instructions
on direct seeding.*

SOUTHERN SEED COMPANY, INC.

Collectors and Distributors of Tested Tree
Seed Specializing in the Southern Pines

BALDWIN, GEORGIA

PHONE 649

FOUR IMPORTANT McGRAW-HILL BOOKS

CONSERVING NATURAL RESOURCES, Principles and Practice in a Democracy, Second Edition. By Shirley W. Allen, Professor Emeritus, Department of Forestry, School of Natural Resources, University of Michigan. 370 pages, \$6.75

RECREATIONAL USE OF WILD LANDS by C. Frank Brockman, Professor of Forestry, College of Forestry, University of Washington. *McGraw-Hill American Forestry Series*. Ready in August.

FOREST FIRE: CONTROL AND USE by Kenneth P. Davis, Professor of Forest Management, and Chairman of the Department of Forestry, School of Natural Resources, University of Michigan. *McGraw-Hill American Forestry Series*. 584 pages, \$12.00

NATURAL RESOURCES by M. R. Huberty, Department of Engineering, University of California, Los Angeles; and W. L. Flock, Associate Engineer and Lecturer, Department of Engineering, University of California, Los Angeles. *McGraw-Hill UCLA Extension Series*. Ready in April.

Send for Copies on Approval

McGRAW-HILL BOOK COMPANY, INC.
330 WEST 42ND ST. NEW YORK 36, N. Y.

Mist Blo 26C

The
one shot
all purpose
spray concentrate
which helps
STOP

The spread of
**DUTCH ELM
DISEASE**

New Improved
formulation
contains
"WEATHER-X"

Special
anti-weathering
assures
longer residual
control!



Chemical Insecticide Corporation formulates a complete line of Insecticides, Herbicides, Wood Preservatives, Rodenticides, Weed Killers, and Foliar Plant Food, used in the shade tree and public health fields.

Send for a free booklet to help solve your particular problem. Write: Dept. AF

CHEMICAL INSECTICIDE CORPORATION
30 Whitman Avenue, Metuchen, New Jersey
Liberty 9-2300

Forester's Notebook

(From page 6)

owners, county agricultural workers, and private forest industries in their problems.

The first trainee, George W. Smith, specialized in weed technology at North Carolina State University two years ago and received a Master of Science degree. He received a \$5000 fellowship from R. Hoe and Company of New York, manufacturers of saws and cutting tools. His work now is mainly with the furniture industry.

The second trainee, Fred E. Whitfield, now is studying control of forest insects and diseases at the New York State College of Forestry under a \$6000 grant from the Richardson Foundation, Inc., of Greensboro, North Carolina.

Mr. Gray intends to provide specialized training for all staff members as rapidly as funds permit. He now has a \$39,000 scholarship application pending with an unidentified sponsor.

Operation Fish Pond

(From page 37)

about \$10,000; the remainder was covered by federal fish and game restoration funds. These supplementary funds are available to all state game departments for approved fish and wildlife projects.

Top officials of the U. S. Bureau of Public Roads, the agency that administers federal grants for road construction, already have approved the use of highway fill for dams, providing the engineers approve the plans. This requirement safeguards against hurried planning.

The correct site for a pond depends on several factors. Two of the most important are the water-holding capacity of the soil and the adequate design of the highway fill in the section where it serves as a dam, to prevent seepage and possible washout of both the road and the pond. The road fill must be properly sloped and faced with rock or concrete as an additional guarantee against seepage, water-level erosion, and slippage. Adequate spillway facilities must be installed to handle overflow. These problems are largely routine, however, and engineers will not be troubled by them.

The biological aspects of the pond—water supply, depth, fish for stock-



HAS IT OCCURRED TO YOU?

There are many members and friends of The American Forestry Association who find it impractical to contribute to its educational activities during their lifetime. Gifts in the form of a bequest are welcomed. Officers of the Association will gladly consult at any time with those who wish to know more about designating gifts for educational work in forest conservation.

Following is a paragraph suitable for incorporation in wills:

"I hereby give, devise and bequeath _____ to The American Forestry Association, Washington, D. C., a non-profit District of Columbia corporation, or its successor, or successors, for the purpose of promoting the corporate activities of said Association."

THE AMERICAN FORESTRY ASSOCIATION

919 Seventeenth Street, N.W.
Washington 6, D. C.



A FOREST FIRE IS NO PENNY-ANTE AFFAIR, BUT...

FIREBRAKE® GIVES YOU WINNING ODDS

IT LETS YOU "BUY TIME"—AT BARGAIN RATES! Since time is *always* vital, put FIREBRAKE to work in your spray rigs and flying tankers! It knocks down fires fast—flameproofs surrounding fuels. For making quick attack on wild flames in remote areas, your most effective weapon is FIREBRAKE applied by air-drops. And, for quickly establishing safety and security for fireline crews, ground application of FIREBRAKE is a proven tool.

FIREBRAKE is sodium calcium borate—packaged in easy-to-handle 50-lb. paper bags. You can put it to work fast! Mix it with water in the field; as a slurry, it remains stable. FIREBRAKE clings to whatever it touches—forms a long-lasting protective coating which effectively retards flame. For further details, write today!



United States Borax & Chemical Corporation

PACIFIC COAST BORAX COMPANY DIVISION
630 SHATTO PLACE • LOS ANGELES 5, CALIFORNIA

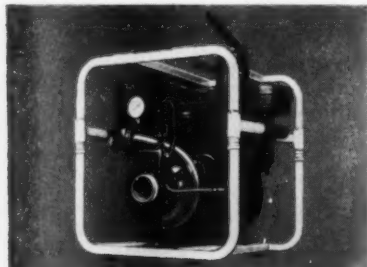


A "20 MULE TEAM" BRAND PRODUCT



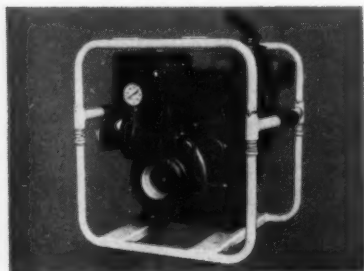
best available chemical for retarding forest fires!

NEW IN DESIGN LIGHTER IN WEIGHT —HALE^{FZZ} and ^{FZ} —WORKHORSES



Type FZZ—Packs a **PRESSURE** Punch
2½" Suction and 1½" Discharge
Designed for pumping through a 2½" line over
350 ft. long.

Supplies from draft, on 10 ft. lift:°
60 U.S. GPM at 90 lbs.
80 U.S. GPM at 82 lbs.
100 U.S. GPM at 72 lbs.



Type FZ—Packs a **VOLUME** Punch
3" Suction and 2½" Discharge
Designed for pumping through a 2½" line not over
350 ft. long.

Supplies from draft, on 10 ft. lift:°
85 U.S. GPM at 60 lbs.
150 U.S. GPM at 52 lbs.
300 U.S. GPM at 18 lbs.

°Based on level terrain

New in design, the FZZ and FZ pump bodies and heads are of aluminum for lighter weight. New, efficient check valves and improved Hale ejector-type priming—these are only a few of the new features!

Conveniently portable for two men (now only 148 lbs.), either unit can be mounted or carried on any type of apparatus or truck for fighting fires while in motion from booster tank, or can be used to fight fires direct.

Write today for NEW information and literature; ask for demonstration.

Please send information immediately on your new, improved FZ & FZZ portable fire pumping units. Dept. AMF

Name _____

Address _____

Town _____ State _____

HALE FIRE PUMP CO.
Conshohocken, Pa.

ing—are in the bailiwick of the state game department. There is little reason why construction cannot proceed once the proper combination of factors is found at a potential site. The key to success then hinges on an inexpensive commodity—cooperation.

Urieville Pond personifies cooperation. To speed the work, the road department offered to prepare the pond plans and specifications, advertise for construction bids, and supervise and check for contract compliance. This offer was accepted, and the game commission in turn was billed for the actual costs involved. Substantial savings were made because both the pond and the road were built by the same contractor. By using state roads personnel, the game department was spared the expense of retaining engineering counsel. Cooperation did not end there, however. Five farmers donated the land that was to be flooded.

The Urieville effort worked so well that both state agencies recently issued a formal declaration of intent to work cooperatively in all parts of Maryland. Advance road plans will be handed to the game department for study and location of potential pond sites. If a check on the ground discloses sites suitable for the construction of a roadside pond, each agency will pool its technical skills to bring the ponds into reality.

Groups in other states are working for similar agreements. In West Virginia a highway dams movement has won the support of practically all major business, civic, conservation, and rural groups. The West Virginians are drafting legislation for introduction in the 1959 legislature that will direct the roads de-

partment to cooperate with other state agencies and interested groups in pond construction. The proposal will be patterned after a law already on the books in Ohio.

Special enactments may be necessary in states where existing law forbids or limits the roads departments from entering into cooperative programs. In others it might be the best way to spur reluctant agencies into a cooperative frame of mind.

West Virginians are enthusiastic about the program because their state has few fresh water areas. Its hilly terrain and the favorable water-holding capacity of the soil make it ideal for pond construction. Roadside ponds offer an inexpensive and effective means of increasing fishing opportunities, and Mountain States mean to make the program succeed.

Michigan, Pennsylvania, Virginia, and New York also are moving to take advantage of the opportunity. Several years ago, Delaware sportsmen benefited by cooperative effort of their game and state roads departments when road construction was modified to create a productive 1,000-acre waterfowl and muskrat marsh.

In 1957 the International Association of Game, Fish, and Conservation Commissioners, the nation's leading association of top professional fish and game administrators, called on state and federal groups to work for greater coordination in the roadside pond building program. The association believes that the program provides a worthwhile opportunity for enhancing fishing and recreation in areas that have insufficient natural streams and lakes.

Highway construction can be the road to recreation happiness, providing no time is lost in accepting the challenge it offers.

Little Oaks From Big Acorns

(From page 39)

his spirit, even amid the hustle and bustle of the city.

The Western world has been slow in realizing the value of bonsai, as the art of growing dwarf trees is called, but with the growth of an indoor-outdoor type of living, the appreciation of dwarf trees has become more and more widespread. However, a mere copying of the oriental style of dwarfing does not suit our occidental ideas. We must have something of our own so that our reaction upon viewing a dwarf tree will have as its foundation some

well-remembered past experience.

With this thought in mind, the grower of dwarf trees should attempt to reflect the feeling of familiar scenes such as high mountains or other landscapes of exceptional beauty. In this way the trees can be an ideal addition to our modern patio living, bringing much of the great outdoors into our busy urban lives.

Dwarf trees grow naturally on mountains, clinging precariously to the thin soil, stunted by lack of water and deformed by harsh winds.

Any variety of tree can be used, but the best are those with naturally small foliage and flowers, since these parts are not dwarfed in proportion to the tree's over-all size; if large, they would spoil the miniature effect.

Jack Catlin pays careful attention to his trees' needs—proper soil, regular watering, good drainage, balanced fertilizer—especially after he has trimmed the roots and repotted them, for it is then that a normal tree is transformed into a bonsai. Why not grow a dwarf tree of your own for that corner of your patio and bring a bit of nature into your living?

Facing Up to Our Water Problem

(From page 23)

crystal globe of such magnitude we need to clarify what we mean by our water problem.

Water can mean many things to many people. To many it is identified as the problem of supply—the water we need for cities, homes, industries, and agriculture. To others, it is the problem of floods and drainage. To others navigation, or recreation, and to many others the problem of quality of water and pollution abatement. We can add other problems to that list—as, for example, the whole relationship of land to water. Because we are human beings and act the way we do, it has been a common practice to fracture this water problem into each of the above segments. You will immediately recognize that we have as many different interest groups and stacks of legislation as we have water problems. The reasoning for this approach is readily recognizable in the way our interests and needs have ebbed and flowed with the changing crises of water.

For example, great droughts in Ohio in 1953 and 1954 started the state on a long-range problem of developing a plan for new water supplies. Last month we were hit with a \$100,000,000 flood. Now the hue and cry is for more flood control. Raising, lowering and changing these water problem flags makes the formulation of any water policy as capricious as the display of weather warning flags at our Coast Guard stations. As helmsmen at the wheel, water resource administrators find it almost impossible to keep the water policy ship on a steady course.

What is this course? Fundamentally, it would appear that any water

HYBRID RHODODENDRONS



Each of these sturdy plants is enclosed in its own wooden band which holds the earth firmly around the roots. Makes planting safe and easy.

Perfectly packed . . .
Perfectly sure to grow

54½¢ each

Sold in dozen lots only.
Mixed colors to give you
a riot of color in June.

1 Dozen \$6.50

Limited Supply

We cannot ship until all danger of frost is over (late in May) but be safe.

Order now from
this advertisement



The twelve plants come packed in this special mailing carton to insure arrival in perfect condition. Each plant is growing in its separate band.

Other rare varieties of Evergreens packed and shipped same way

AZALEA Hexe, extra showy scarlet, double
Rosebud, dwarf, double blush-pink, extra hardy
Rose Greeley, double white, showy, extra hardy
Flame, huge single red, dwarf growing
Hinoerimon, a much improved, hardier Hinodigiri
Othello, large tall, brick-red, extra hardy
Indica Alba, large white, tall, single
Palestrina, large double white, new
ABELIA grandiflora, pink-white all summer
BERBERIS Juliana, small yellow, spring, extra hardy
BOXWOOD (dwarf, English)
CAMELLIA SASANQUA (Hardy to Zone VI)
Cleopatra, semi-double rose, peony-type
Maidens Blush, single blush, very popular
COTONEASTER horizontalis, red winter berry, low
ILEX CRENATA convexa, dwarf Japan Holly

ILEX OPACA female, berried American Holly

ILEX OPACA male, platillate American Holly

JUNIPER pfitzer, 6 ft. spreading, popular

Andorra Fine Creeper

MAHONIA aquifolia (Holly-grape) blue fruit

PIERIS japonica (Andromeda) white, April

PYRACANTHA Lalandi (Firethorn) orange berries

RHODODENDRON Hardy Hybrid Seedlings, mixed colors, June

TAXUS Cuspidata (Spreading Yew) broad, low
Capitata (Upright Yew) tall pyramid
nana ("Brevifolia") dwarf yew
Hicksi, narrow column to 6 feet

1 Dozen, any one kind listed above \$6.50

1 Dozen (6 each of 2 varieties) \$7.00

All orders shipped postpaid • Guaranteed live arrival in good condition

KELSEY NURSERY SERVICE

Dept. D-27 • Highlands, N. J.

USE FOR
LEVELING

CHECKING
ROAD GRADES

MEASURING
TREE HEIGHTS

TOPOGRAPHIC
MAPPING

DOES 4 JOBS BETTER



LEUPOLD
Engineered
ABNEY LEVEL

4 standard scales held in milled slide ready for immediate use without removing and reversing arc frame. Micrometer control of index arm for more accurate readings. Bubble magnifier adjusts internally—no eyepiece to retract for carrying.

Complete with 4 common scales \$33

Degrees • Per Cent

Topographic

Chainage Corrections

LEUPOLD HAND LEVEL. Exclusive internally adjustable bubble magnifier. Leather case. \$13.95

At Dealers or Send Check or M. O. (No C.O.D.'s)

With saddle leather case and Abney Level Handbook.

Illustrates how to make full use of Abney Level. 25c

LEUPOLD ABNEY LEVEL HANDBOOK

Illustrates how to make full use of Abney Level. 25c



LEUPOLD & STEVENS INSTRUMENTS, INC.
4445 N. E. GLISAN STREET • PORTLAND 13, OREGON

**BETTER SURVIVAL,
BETTER GROWTH
WITH
ROOTSPRED TREE PLANTERS**



ROOTSPRED "Lake States" Scalper reduces competition 15" each side of planted tree.

- For effective scalping — north or south, heavy soils or light
- A deeper trench with soil loosened below root level
- A dependable satisfaction guarantee
- An economical model for Christmas Tree Growers
- Also a production plantation mower—double rotary

For specifications, prices, photos, write:

ROOTSPRED

St. Petersburg,

Pennsylvania

policy must recognize that water has to be controlled and managed so as best to serve the needs of mankind. To be effective, this policy needs to be so designed and so adaptable that it can be workable where people need it. It cannot effectively succeed by championing one interest over another. It furthermore requires a basic knowledge of water behavior.

Up to this point, we have only discussed water behavior in terms of rainfall. An equally interesting part of this problem is what happens to the water after it reaches the ground.

Through the ages of time, Nature has etched out the courses of streams and rivers. Each tiny tributary, each stream, each river has its own catchment basin, or watershed. Our watersheds thus divide our supplies of rainfall. Depending on their size, their topography, their geology, temperature, land use, and types and conditions of their soils at the time of precipitation, each watershed develops a water delivery character of its own. By continually gauging and studying the record of streamflow we can gradually determine just what the ranges of streamflow can be within the limits of rain delivered to it.

Every water improvement we make, whether for water supply, flood control, drainage, power, navigation, recreation, or pollution abatement is determined by the water delivery character of its watershed area. Try as we will, we can't escape this truth. Our watersheds thus become the all-important link between rainfall from the heavens and mankind's use and control of water.

How unfortunate that we have fractured that link by such simple, unassuming devices as lines on a map called political subdivisions. But those political boundaries stand today as one of the great problems of effectively finding a way out of our increasing water dilemma. Here we find the interesting analogy of mankind fighting against himself. Dependent on effective watershed control, he has surrounded himself with so many political barriers that he finds himself in a continual struggle to break through a vastly complicated web.

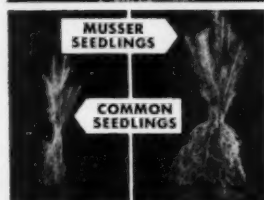
Realistically, we can't go back to the Utopia of erasing our political boundaries. So how do we do the next best thing, which is to live with the mess we have created?

Back in 1914, following disastrous floods which wrought great destruction in the Buckeye State, Ohioans masterminded the Conservancy District Act which permitted superimposing on a river basin a new governmental tax structure, with power to permit groups of political subdivisions to plan jointly to develop flood control improvements. In a local venture with no assistance from the state, citizens in the Miami Valley fought through years of litigation between themselves before they finally completed their \$30,000,000 flood control improvements. Later, the great Muskingum District came into being. By that time too, state and federal assistance was available. So in contrast to the local financing accomplished in the Miami, the Muskingum Conservancy was developed almost entirely with funds from other sources.

It is ironic that the Ohio Conservancy Law, conceived to provide watershed management, with later revisions to include water supply, recreation, drainage, and pollution abatement and copied by many other states, has not been used more widely in Ohio. It still has many weaknesses, which lawyers now are trying to correct. The weak link in it still is how to get political subdivisions in a watershed to work effectively to

***20
MILLION
TREES
A YEAR!**

***NOW OVER 35 MILLION!**



MUSSEY TREES...

Make Better Timber Crops!

Prime timber begins with the seed. With Mussey you are assured of Good Heredity characteristics through careful selection of seed. With Scientific Culture in Mussey nurseries the seedlings develop the strong, extensively branched, compact root system necessary for extracting the most food from the soil of the planting site.

Mussey offers the largest selection of quality trees at a price made possible through large quantity production.

Here are a few of the items listed in our catalog:

SPECIAL STRAIN SCOTCH PINE

Per 1000

Very best Christmas tree strain, from seed collected by our men from selected parent trees. Healthy, sturdy, straight-stemmed. Also all other best strains Scotch Pine.

2-yr. Seedlings, 3 to 6 ins.\$25.00

2-yr. Seedlings, 5 to 10 ins. 35.00

AUSTRIAN PINE — Austrian Alpine Stock

2-yr. Seedlings, 3 to 6 ins.\$25.00

NORWAY SPRUCE — Special Strain Fast Growing

Fine for Christmas Trees, Ornamental and Timber.

2-yr. Seedlings, 5 to 10 ins.\$35.00

DOUGLAS FIR — Hardy

2-yr. Seedlings, 4 to 8 ins.\$25.00

3-yr. Seedlings, 8 to 12 ins. 55.00

Many other Evergreens—Hardwoods—Ornamentals—Shade Trees

Write for Catalog..

WITH WHOLESALE PLANTING LISTS. ASK FOR OUR FAMOUS CHRISTMAS TREE GROWERS' GUIDE

MUSSEY FORESTS, INC.

**27-D
INDIANA, PA.**

finance and construct water improvements.

This problem is not one common to Ohio alone. There are problems, too, in the concept that watersheds must be locally administered for the benefit of the people in the watershed. That may hold true for many of our watershed approaches, particularly flood control. But it has a lot of weaknesses in it when we think in terms of water supply.

In many states, we are finding mushrooming metropolitan areas spreading their sprawling suburbs over several watersheds. Is local watershed control the answer in such areas? We also find "have" and "have-not" watersheds. For example, northern California river basins have tremendous supplies of water but relatively small needs compared to the great demands in the low water-yielding areas in the southern part of the state. Huge water transportation systems are being planned, spanning great distances, to solve this problem. Los Angeles for years has had to look to watershed areas far removed from its environs for supply. No locally administered program by the people living within such watersheds can solve these problems.

The concept of river basin and watershed control must be flexibly applied, depending on the particular problems in each area and the needs of the people.

Here in Ohio we have been working for three years on a water plan inventory. We have found that water supply is becoming an increasingly difficult problem—not because water is scarce but because of the rising costs of securing it and, after using it, of adequately treating it before returning it to our streams and lakes. Finances are the number one headache. Unless we are smart enough to lower these cost barriers, we can visualize some rough times ahead.

One thing contributing to this dilemma in Ohio is the growth in municipal water supply systems—from 172 in 1900 to 625 today. We think one answer is fewer supply systems, with wide-scale regional and watershed developments efficiently managed to lower costs and to provide wholesale water to more user areas. These same developments would handle the problem of sewers. We likewise visualize the need for a system of reserving reservoir sites while they are still available, more pipeline developments, and eventually more diversion of water between watersheds.

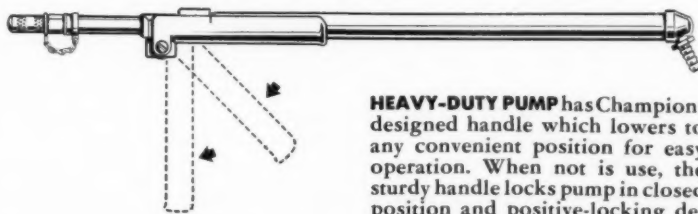
Our studies of water use have

shown a net consumption of only 10 per cent of daily water withdrawals of over 12 billion gallons daily. This means that tremendous quantities are being returned after use. Therefore, pollution abatement is as important a part of water conservation as building new supply sources. Thereby we could re-use water many times.

We have also found in Ohio something like 48 agencies assigned by law with some kind of water authority, not to mention our 625 municipal water agencies. There's an old saying that what is everybody's business is nobody's business. Where then, do we go from here?

First is a direct assault, and that is by the states themselves. Each state has a tremendous opportunity to exert a new and dynamic leadership in formulating water resource policy for its own citizens. This policy needs to be supported with money and by aggressive programs of research, planning and development. If need be, the states can even assist to the extent of creating watershed districts by state law, and providing assistance in managing them. This would help to answer some of the

CHAMPION slide pump makes "a little spray go a long way" on a fire-fighting job



HEAVY-DUTY PUMP has Champion-designed handle which lowers to any convenient position for easy operation. When not in use, the sturdy handle locks pump in closed position and positive-locking device on cover holds pump securely. Pump is brass throughout with non-corroding, self-cleaning bronze ball valves.

ADVANCED-DESIGNED TANK is also built for dependable performance. Important feature is attachment of hose at top of tank to prevent water leaking when pump is below bottom of tank. Large filler opening has leak-proof cover with non-freeze gasket; locks securely, no threads to wear. Tank holds up to 5 gallons.



VENTILATED BACK is form-fitting and, providing air circulation between tank and operator's back, guards against discomfort. Wide, adjustable straps make it easy to carry as knapsack.

Piston-type pump also available. Write for literature on both models. Distributor inquiries invited.

CHAMPION SPRAYER COMPANY

Manufacturer of Portable Sprayers and Dusters

6509 HEINTZ AVENUE • DETROIT 11, MICHIGAN

PANAMA

- B.B. Fan Drive Pumps
- B.B. Slip-on Units
Pump and Engine
- Slip-on Units Complete
Pump, Engine, Tank, Completing Materials, All on steel skids
- Compensating By-passes
- High Pressure Hose
- Pistol Grip Cut-offs
- Combination nozzles
- Vacuum Lift Systems
- Automatic Float Valves
- Tree Injectors
Pressure Type
- Tree Marking Guns
Pressure Type
- Stainless Steel Drip
Torches
- Flame Guns
- Angle Gauges
For Estimating Basal Area

Write For Free Catalog

PANAMA PUMP CO.

410 So. 37th Ave.
Hattiesburg, Mississippi

problems of water diversion that will ultimately arise.

State water resource activity, with but few exceptions, has been a weak sister compared to other state natural resource conservation effort. Expenditures reported to the Council of State Governments in 1954-55 fiscal year, exclusive of pollution control and wildlife developments, totalled only some \$24,000,000. Only a few states have ventured into the field of water development—an activity generally left to the federal or local governments.

But there are signs of a hopeful emergence of state activity since 1955. Here are some of the highlights: *Nine states* have created new water resources agencies since 1955; four others reorganized existing departments. *More than three-fourths of the states* passed important new water laws. *California* has completed a state water plan, and upped appropriations for its Water Resource Department from \$4.6 million in 1955 to \$14 million in 1959. *New Jersey* authorized a \$48,850,000 bond issue for state water improvements; appropriated \$100,000 to start underground water explorations. *Texas* appropriated \$1.2 million to its state water agency to start a state-wide wa-

ter plan; voted a constitutional amendment authorizing \$200 million in bonds for water improvement projects. *Connecticut* has recently consolidated its several water agencies into a water resources commission; enacted a flood plain zoning law to be administered by the new commission. Appropriations have been upped to \$1.5 million, plus another \$2.75 million for state aid in flood zoning and construction. Many other states have special water study commissions at work.

Second: Greater federal participation, with particular consideration to studying the feasibility and means of cooperative financial assistance with the states on programs of water development and pollution abatement. Such a program might be similar to the patterns of cooperative federal—state highway construction and forest fire control. Such financial participation should be on a matching basis as a stimulus and incentive to state participation.

Third: A nationwide program of citizen education and their participation in water resource programs. Broadly conceived, such effort, while working at all levels of government, should stress local effort. An enlightened public, with inspired leadership, can be the greatest force around which to marshal a frontal attack on every phase of water resource development that we can envision.

Fourth: A broadened program in our colleges and universities of training water resource management engineers.

Fifth: A national water congress to be called by the President, with the governors, their staffs, and selected individuals to draft in open meeting a program of water conservation for the United States. The similarity between the idea of a proposed water congress and the American Forestry Congress of 1908 will be readily recognizable.

These recommendations are only one man's opinion. There are many more which others can add. But the opportunity and challenge to face the water problems ahead are tremendous.

We can never hope to fit everything into a perfect pattern, or to reach agreement on a total water resource program. But by defining those areas of agreement and by constant public debate on other issues we can move constantly ahead. In the meantime any effort is better than no effort.



More profit—less downtime! POULAN'S versatile '59 line gives you three great models to choose from... new guides shaped and toughened to do any cutting job economically. POULAN Chain Saws are set to pinch pennies like never before! See 'em for yourself—see a POULAN demonstration today!

POULAN
CHAIN SAWS

Shreveport, Louisiana



To The Woods For Delinquent Boys

(From page 19)

they are not hardened criminals. I look upon the penitentiary as being a place to which only the hardened criminals should be sent."

The maximum term a boy can serve at the camp is two years. The minimum time is one year, and the duration depends upon his conduct while there. Once released, he is returned to the court from which he was sentenced and he is then placed upon probation. From then on, "He is free to return to society within a minimum interlude."

When operated efficiently, there is little question but what this forestry camp affords those committed a rare opportunity to get back upon the right track. Their chances are very good for returning home better men than they would have been returning from prison. What is more, while the state is saving souls, it is also making money in the long run.

If that seems mercenary, let us explain. West Virginia has spent about \$50,000 rehabilitating some 95 delinquent boys at this one forestry camp. During that time, however, these young men accomplished some \$200,000 worth of construction and labor for the state. During this same two-year period, it would have cost West Virginia at least \$50,000 if the boys had been maintained in complete idleness.

Unemployment in their respective communities has been attributed as one major reason many of these boys originally got in trouble. When they arrived at the camp, many had few if any qualifications to recommend them for any type of labor. They had exceptional bodies and were intelligent, but ability in any field was lacking. Some could not use a hammer or a saw or shovel. To go from idleness to progress, all that was required generally was supervision and training. State Parks Chief Kermit McKeever has said that many of these lads should qualify as able assistants to carpenters or stone masons and for similar work when their terms expire.

To appreciate fully the tremendous contribution these formerly "forgotten" youths have made to West Virginia, one need only visit Blackwater Lodge at Blackwater Falls State Park near Davis. Here one can readily see what has been called, "the largest single job accomplished." This job was the landscap-

Weedone chemicals aid reforestation!



WEEDONE 2,4,5-T

*Special
air
spray
formula*

... kills undesirable brush for more effective

reforestation and better pine release

Successfully used by industry, experiment stations and foresters, Weedone provides safe, effective and economical chemical action for releasing pine from undesirable overstories. Weedone not only kills undesirable brush, but reaches in to destroy a major part of the broadleaf weed population hidden in grass cover. Results are clearly evident with Weedone—new seedlings become firmly established, without interference, and growth quickly begins.

The special air spray formula is specifically recommended for aerial application in Forest Management, pine release and reforestation. For Timber Stand Improvement and Weed Tree Control, specify DINOXOL or TRINOXOL where the technique is stump spraying, basal spraying, frill treatment, tree injection or airplane application in oil only.

For heavier woodland yields, let Weedone Brush Killers serve your purpose by solving your problems.

Write for details on Weedone Brush Killers for forestry uses.



WEEDONE Brush Killers

another chemical development of
Amchem Products, Inc.

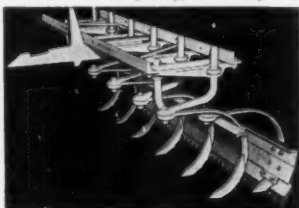
(Formerly American Chemical Paint Co.)
St. Joseph, Mo., AMBLER, PA., Niles, Calif.

Amchem, Weedone, Dinolox and Trinolox are registered trademarks of Amchem Products, Inc.

ROSEMAN TILLER-RAKE



Just one tool, the low cost Roseman Tiller-Rake, with pitch control wheel, does a complete seed-bed preparation job. Scarifies hard, rutted and compacted ground, tilling and pulverizing the soil, grading, spreading and finish raking it into the perfect seed bed. No need to own or use plows, discs, blades, drags or harrows to complete the job. One man does it all quickly, efficiently and perfectly . . . and at substantial savings in cost for labor and equipment.



The Roseman Tiller Rake gives excellent results in nursery, plant growing and soil fumigation work. Models to fit most tractors. Specify make and model of tractor.

Write for descriptive literature, price and availability today on this money saving tool.

ROSEMAN TRACTOR EQUIPMENT CO.
3637 CRAWFORD AVE. PHONE UNIVERSITY 4-1840 • EVANSTON, ILLINOIS, U.S.A.

Perfect Ground Cover for Banks and Shady Places



MYRTLE (Vinca Minor)

A neat, sturdy creeping plant that stays green all winter. Blue flowers in May. Resists insects, disease and drought. Our big heavy clumps with 12 or more stems can be planted 2 ft. apart on level; 1 1/2 ft. on slopes. You cover big areas for little money.

100 BIG CLUMPS \$15.00—1000, \$120.00

HARDY EVER-GREEN IVY

Baltic Ivy defies dogs, children and drought. Steep slopes, sun or shade. Space 1 ft.



25 POTS, \$7.50
100 \$26.00

PACHYSANDRA

Thrives under trees and in poor soil. Beautiful shiny evergreen leaves. Space 6 in. apart.

100 \$9.50
1000, \$85

KELSEY NURSERY SERVICE
Highlands, N. J., Dept. D-26

TREE FARM MANAGEMENT SERVICE, INC.

Consulting Foresters
Forest Inventories, Appraisals, Reforestation,
Management Plans and Services
1166 7th Avenue West Eugene, Oregon

ing of Blackwater Lodge. A building contractor who viewed the work, on a recent visit to the area, Kermit McKeever reports, estimated that the state would have paid no less than \$50,000 on the open market. Since the budget for this was not adequate, most likely it would have gone a long time before it was done, without the boys' help.

While speaking of what the boys have done for this state park, what has the park done for them? First off, pride bubbles within them when people visit the area and observe their handiwork. Few had ever before realized such an emotion. Secondly, they learn with each stone they lay and with each board they cut or nail or saw. They are learning to listen to instructions. What's more, they are learning to listen to the rush of the mighty waterfall that gave Blackwater Falls State Park its name. And they know the strange sounds of the night that used to go unnoticed, such as whippoorwills, great horned owls, and softly singing spruce trees swaying in the evening breezes.

If such things seem trite, consider then that such elations have been virtually absent from these boys' lives. Rarely have they been cultured to such things, and such culturing is a great part of this thing called "rehabilitation."

If one would care to stretch a point somewhat, he could call this period of training in West Virginia's Forestry Camp an "apprenticeship." Certainly, that is what it is. While a great deal of the jobs to be done, such as rock-basing roads, trail construction, garbage and trash collection, digging of drainage ditches and many others, are labor pure and simple, many jobs are skilled. These include construction of play courts,

building of swimming beaches, laying of rock walls, concrete curbing for parking lots, landscaping and seeding and construction of picnic tables. These jobs can train any intelligent young fellow for future employment when his term expires and he returns back home.

The boys at this camp are the responsibility of the Department of Institutions, which provides food, housing, and clothing and looks after the general well-being of them all. The Conservation Commission, through the State Parks Division, has the responsibility for the work program. The commission provides tools, materials, equipment, and supervision. Close cooperation between the two agencies of the state has been a big factor in the success of the camp.

Just as the job of state park maintenance is year-round, so is the job of rehabilitation. Idle hands often make for typical problems found anywhere youngsters are away from home, and the forestry camp is little different. These lads get homesick too. Therefore, periodically, parents are permitted to visit their sons. Despite such considerations, there is an occasional runaway. In any such endeavor, that will happen. The boys themselves, however, recognize this camp as a real "break," and the number of escapes is low. Even then, it is rarely a problem apprehending those who leave "without permission."

The forestry camp near Davis is West Virginia's first. There is talk of additional camps in other areas. People may someday question their purpose. That purpose is to separate the "bad boys" from the "good boys who have gone wrong." Where else but in her vast forested mountains could this be done better?

Two Big "Breakthroughs"

(From page 8)

to expectations, and that we should all campaign vigorously for more and more research to the end that agriculture, forestry, wildlife, and all the other interlocking uses and users of land can live together harmoniously, with all national interests most effectively served.

With members of the Natural Resources Council of America now indicating that an effective hemispheric conference on tourism probably can't be planned and staged in either 1959 or 1960, the council devoted much time and thought to the World Forestry Congress to be

held in Seattle in 1960. Chairman Charles Callison, who represents the council on the congress' steering committee, expressed the hope that a special panel on recreational planning could be arranged at the congress as a part of the multiple use program discussion. The American Forestry Association and other members supported this proposal and key foresters later indicated they thought this was a constructive idea and should be carried out. The interest shown by the council in this big project was a source of much satis-

THE BOOK SHELF

Members of the Association are entitled to a discount of 10% from the publishers price of books on forestry, conservation and related subjects. We offer only a partial listing of such books and you are invited to order others on the same subjects, whether listed or not.

THE AMERICAN FORESTRY ASSOCIATION

919 - 17th Street N.W.

Washington 6, D. C.

THE AMERICAN FORESTRY ASSOCIATION

Knowing Your Trees—Collingwood & Brush	\$ 6.00
Teaching Conservation—Beard	1.50
Trees Every Boy and Girl Should Know	.50

TREES

American Trees, A Book of Discovery—Platt	\$ 3.50
Deciduous Forest of Eastern North America—Braun	10.00
Field Book of American Trees and Shrubs—Mathews	3.95
Fundamentals of Horticulture—Edmond, Musser, Andrews	6.75
Illustrated Guide to Trees and Shrubs—Graves	6.00
Natural History of Trees—Peattie	6.00
Standard Cyclopedia of Horticulture—Bailey, 3 Vols.	52.00
Tree Care—Haller	5.95
Trees for American Gardens—Wyman	7.50
Trees of the Western Pacific Region—Kraemer	5.50

GENERAL FORESTRY

Forests For The Future—Loehr	3.00
Forest History Sources of the United States and Canada—Neiderheiser	3.00
Forest Policy—Greeley	6.00
Forest and Range Policy—Dana	6.50
Forest Valuation—Chapman & Myers	7.75
Forests and Men—Greeley	3.95
Indian Forest and Range—Kinney	4.50
Introduction to American Forestry—Allen	6.50
The Biltmore Story—Schenck	3.95

FOREST MANAGEMENT

Aerial Photographs in Forestry—Spurr	\$ 6.50
American Forest Management—Davis	7.50
Applied Forest Management—Bruns	5.00
Applied Silviculture in the United States—Westveld	6.75
Developing Farm Woodlands—Preston	5.50
Forest Inventory—Spurr	8.50
Forest Management—Meyer, Recknagel & Stevenson	6.00
Forest Pathology—Boyce	8.50
Forestry and Its Career Opportunities—Shirley	6.75
Management of American Forests—Mathews	6.00
Plant Pathology—Walker	10.00
Principles of Forest Entomology—Graham	7.00
Soils and Soil Fertility—Thompson	7.00
The Federal Lands: Their Use and Management—Clawson & Held	8.50
Tree Crops—A Permanent Agriculture—Smith	6.00

LANDSCAPING AND CARE—GARDENS, TREES,

FLOWERS

Encyclopedia of Gardening—Taylor	\$ 5.95
Field Book of Western Wild Flowers—Armstrong	5.00
Garden Flowers in Color—Foley	3.95
Guide to Home Landscaping—Bushey	4.95
How to Landscape Your Grounds—Johnson	3.50
Plant Buyers Guide—Steffek	7.50
Shrubs and Vines for American Gardens—Wyman	8.00
Successful Gardening Without Soil—Tiequet	2.75
Using Wayside Plants—Coon	3.00
Wild Flower Guide—Wherry	3.95

WOOD—ITS MANUFACTURE AND USE

Air Seasoning and Kiln Drying of Wood—Henderson	\$ 6.50
Concise Encyclopedia of World Timbers—Titmuss	5.00
Harvesting Timber Crops—Wackerman	7.00
Library of Pulp and Paper Manufacture—McGraw-Hill	31.50
Structure of Wood—Jane	9.50
Textbook of Wood Technology—Brown, Panshin & Forsaith	
Vol. I	8.50
Vol. II	10.00

BIRDS, WILDLIFE, HUNTING AND FISHING

After the Sun Goes Down—Blough	\$2.75
Audubon Western Bird Guide—Pough	4.95
Audubon's Birds of America—Vogt	11.95
Birds Are Yours—Lemmon & Eckelberry	2.25
Books of Wild Pets—Moore	6.50
Deer of North America—Taylor	12.50
Field Guide to the Birds—Peterson	3.95
Fish Ponds for the Farm—Edminster	3.95
Fishery Science—Rounsefell & Everhart	7.75
Hunters Encyclopedia—Camp	17.50
Land and Wildlife—Graham	5.00
Natural History of Birds—Wing	6.75
On the Trail of Vanishing Birds—Allen	4.50
Ornithologist's Guide—Hutson	10.00
Our Desert Neighbors—Jaeger	5.00
The Reptile World—Pope, C. H.	7.50
Return to the River—Haig-Brown	5.00
Round River—Leopold	3.50
Snakes and Snake Hunting—Kauffeld	3.95
Songbirds in Your Garden—Terres	3.95
Spinning for Fresh and Salt Water Fish in North America—McClane	4.95
The Last Passenger (pigeon)—Johnson	2.75
Wildlife Cameraman—Kjelgaard	2.75

CAMPING

Alaskan Adventure—Williams	\$ 5.00
Canoe Camping—Handel	3.00
Canoeable Waterways in New York State—Grinnell	5.00
Let's Go Camping—Zarchy	3.25
Outdoorsman's Cookbook—Carhart	2.95
Trails Unlimited—Coffin	3.00

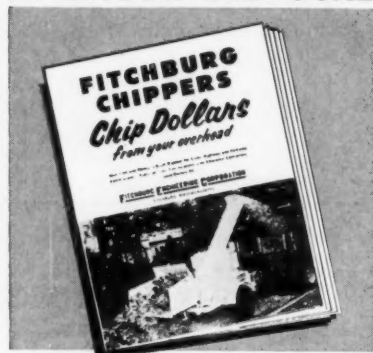
BOOKS OF GENERAL INTEREST

America's Natural Resources—Callison	3.75
American Resources—Whitaker & Ackerman	\$ 7.50
Bears in My Kitchen—Merrill	3.95
Conservation—Coyle	5.00
Conservation Yearbook 1956—Kauffman	7.50
Conservation of Natural Resources—Smith	8.50
Fables for Foresters—Guthrie	3.50
Fieldbook of Natural History—Palmer	8.50
Geography of the Northlands—Kimble, Good	10.50
Hunger Signs in Crops—A Symposium	4.50
Interpreting Our Heritage—Tilden	3.50
Man's Role in Changing the Face of the Earth—Thomas	12.50
Our Nation's Water Resources—Moreell	3.50
Our Plundered Planet—Osborn	3.50
Reclamation in the United States—Golze	8.50
Soil Conservation—Bennett	12.50
They Knew Paul Bunyan—Beck	4.75
Vegetation and Watershed Management—Colman	7.00
Western Land and Water Use—Saunderson	3.75
Woods Words—W. F. McCulloch	7.50

JUVENILE

First Fish—Colby	\$ 2.00
Junior Book of Camping and Woodcraft	4.00
Lookout For The Forest—Blough	2.75
Trees Every Boy and Girl Should Know	.50

HOW TO SAVE MONEY IN BRUSH DISPOSAL



Read how foresters, tree surgeons, highway and park commissions, telephone, power and gas companies cut brush disposal costs up to 50% with a Fitchburg Chipper.

See cut-away color drawings of the Fitchburg Chipper—the exclusive Fitchburg spring-activated feed plate—pictures of different models in action.

FREE — Write for your copy of "Chip Dollars from Your Overhead." Address Dept. AF-49.

FITCHBURG ENGINEERING CORPORATION
FITCHBURG, MASSACHUSETTS

AFA MEMBERSHIP

Any person or company may become a member of The American Forestry Association upon application. There are five classes of Membership:

Subscribing, per year.....	\$6
Subscribing, 2 years.....	11
Contributing, per year.....	10
Sustaining, per year.....	25
Life (for individuals) no further dues.....	150
Patron (for individuals) no further dues.....	1000

All members receive monthly copies of AMERICAN FORESTS Magazine.

faction to all directly concerned with forestry programs. Previously some doubt had been expressed on this score.

In his first public appearance as chairman of the National Outdoor Recreation Resources Review Commission, Laurance S. Rockefeller outlined the task set for the commission which was previously presented in this magazine. In making public appearances, members of the commission will speak as individuals so as not to interfere with the objectivity of the commission as a whole, he said. In his own personal observations, Mr. Rockefeller said that mounting pressures for recreational outlets should be approached on three fronts: federal, state and community. "Great strides have already been made, but I feel much remains to be done—particularly in the third area," he said. "Recreational problems at the community level are particularly important because there are fewer answers and greater pressures."

The growing participation of forest industry both in the annual wildlife conference and wildlife management programs is one of the more cheering developments in the last several years. An attractive brochure by Arthur H. Carhart describing how "trees and wildlife live together" was distributed in New York by American Forest Products Industries, Inc., the educational arm of the forest industries. The booklet shows that a recent survey of 46,263,852 acres privately owned revealed one and a half million visitors are now enjoying those lands, including those who come to hunt and fish. The survey was limited to 455 companies owning industry forests. On the properties on which reports were secured, hunting is provided for on 42,737,538 acres, or 92.4 per cent of the total.

While more and more industry forests today are being used for some degree of hunting, fishing and other recreational uses, James C. McClellan, chief forester of AFPI, said there are still some industry owners who have not yet reconciled themselves to the idea—with the chief drawback being fear of forest fires and sportsman vandalism. Nevertheless, over-all gains on this front are most encouraging, McClellan said, with sportsman-industry cooperation growing steadily, particularly in the South and the West. These gains are encouraging when one recalls that Laurance Rockefeller, told the conference that this is still a young country that has emphasized, and rightly so, the "dignity of work." Recreation, or the proper use of leisure time, has not yet attained a comparable "social or moral stature," Mr. Rockefeller said. "It is still considered by many, including policy makers, with suspicion—as a waste of time." However, this attitude is beginning to change, he stressed.

How does forestry stack up with other facets of conservation in terms of knowledgeability by public school pupils? Robert H. Giles, Jr., of the Virginia Commission of Game and Inland Fisheries, reported that a test with 100 multiple choice questions taken by 15,443 Virginia pupils showed that while forestry education promoters have no cause for complacency, they also have grounds for some satisfaction. Results of the test showed that total average test scores on each section were: general (knowledge), 63.3; forests, 58.7; water, 54.1; soil, 53.8; and wildlife, 48.6. On the basis of the test, the ninth grade seemed to be most responsive to conservation indoctrination. After that, the rate of acquisition of knowledge declined.

"I Must Say . . ."

(From page 26)

change my mind about Olympic Park. He thought what F.D.R. had done was monstrous, extending the boundaries of the park all the way to the ocean, and frankly far beyond what any of us thought we'd actually get. But I stood firm. I told him, "Will, do you seriously believe that after your President and my President has done this thing that we park people are going to fight him? But apparently, he did."

Apparently he did, was right. Ovid Butler, former director of The American Forestry Association, re-

MEMBERSHIP APPLICATION

THE AMERICAN FORESTRY ASSOCIATION 919 17TH STREET, N. W., WASHINGTON 6, D. C.

Please enroll me as a Member of The American Forestry Association. Enclosed find \$6.00 to cover dues for one year, (Including subscription to AMERICAN FORESTS Magazine). My name and address is:

Name

Street

City and State

calls how Col. Greeley spearheaded an effort to open up Olympic Park for lumbering in World War II to help win the war. When Butler demurred, Col. Greeley headed East. Stalking into AFA headquarters, he stuck his nose within an inch of the director's face and asked, "Don't you want to win the War?" Butler said he did, and he might have added that he had a son in the submarine service who had been overdue. But he still didn't think the facts warranted opening up the park. And of course the war was won, Mr. Butler recalls, and the park was not opened up.

What was Miss James' thinking in reference to present needs of the Park Service and proposals to turn Washington's Northern Cascades area into a park?

"Well, the national forests were laid out on a 10-league canvas and we are all mighty grateful that they were," she replied. "The parks, of course, are much smaller and consist of really outstanding examples of America, and that is right too. I do think many of us tend to think in terms of categories on some of these matters. We stress, unconsciously, the objectives in which we are most interested. Of course, we're making progress everywhere and yes, Maryland state parks are coming along nicely, although some of us do feel there is still too much forestry mixed up in that particular program. I must say I like to see parks managed as parks by park people, and I must say that in reference to the Northern Cascades there is no question in my mind, none whatsoever, that the area is national park caliber, one of the few remaining areas where that is true.

"You saw David Brower's film on the Northern Cascades? Well, so did I, down at your meeting, and that area hasn't changed a bit since I was first in there.

"You know, there were always some people who made a fuss about 'lone women' going into those areas with men. I remember Harold Bryant insisted we should have another woman along on the pack train trip over the John Muir Trail from Yosemite to Sequoia in the Sierra Mountains and he was fearful the strain of the climb would be too great for any female. But I must say I walked out of there upright and he sprained his back and came out hobbling. I did the same in the Cascades and my point is that before your association, or any group, makes up its mind about the North-

CUT HIGHWAY MILEAGE COSTS with WARN HUBS

on your **Jeep** 4-wheel drive!



Models for all makes 4-wheel drives to 1 1/2 tons

SAVE REPAIRS, GAS, TIRES!

More pep, easier handling, too!

When a 4-wheel drive with Warn Hubs is used in 2-wheel drive, there's no "dead load" drag from the front drive assembly being turned by the front wheels! Warn Hubs save gears, engine, tire wear and gas; give your 4x4 the pep, speed, performance, handling ease of a 2-wheel drive. You can use 2 or 4-wheel drive whenever you want it—automatically with Warn Lock-O-Matics, manually with Warn Locking Hubs. Get Warn Hubs at your dealer's soon!

WARN MFG. CO.

Riverton Box 6064-FR, Seattle 88, Wash.



STOP FRONT DRIVE WEAR, DRAG AND WHINE IN 2-WHEEL DRIVE!

Exhaust-spark trappers cut forest fires

Ptd. & Pats. Pend.

The GILL Spark Arrestors are almost 100% efficient—

for trucks, tractors, tugs, forklifts, loaders, stationary engines, harvesters, etc.



SAFETY pays off for you—when you trap dangerous exhaust sparks.

You prevent costly fires. You thereby protect your own property and the property of others. So use the Gill Spark Arrestors on all your equipment working in hazardous areas.

As they trap almost 100% of the exhaust carbon from internal-combustion engines, forest rangers and fire wardens are all happy when you use Gill Spark Arrestors.

Designed by experienced engineers and built by careful workmen to give you long, faithful service, these spark arrestors have exceeded all tests for reliability and safety. The Gill Spark Arrestors are ready now to protect you from the risks of dangerous fires.

For full details about Gill Spark Arrestors for all gas and diesel engines, write to us.



ERICKSON PRODUCTS CO.

1960 Carroll Avenue
San Francisco 24, California



MINE SAFETY APPLIANCES CO.
54 Branches Everywhere
Home Office: Pittsburgh, Pa.

6 Patents. Best material. Sold by the thousands.

Infringers and imitators warned

Best Chrome Steel—Strong, Durable

THE RENOWNED
CHARLES H. RICH
"Forest Fire Fighting Tool"
Write for Prices and Descriptions
THE C. H. RICH FOREST FIRE TOOL CO.
218 West Bald Eagle Street, Lock Haven, Pa.

You can train for an
OUTDOOR CAREER
in Conservation through our combined
Home Study and Field Courses in
**FORESTRY - WILDLIFE
SOIL CONSERVATION**
Men trained by our courses qualify
as technicians in public and private
employment. Write today.

NATIONAL SCHOOL OF FORESTRY & CONSERVATION
2144 P STREET, N. W. WASHINGTON 7, D. C.

ern Cascades, I wish you'd send a representative group in there really to look at the area and make a report. It is spectacular.

"Now, I would like to say that I don't hold with a lot of this public criticism of both the Forest Service and the National Park Service," Miss James continued. "I have the greatest admiration for both Dr. McArdle and Connie Wirth, and their doors are always open to all. That's why I feel some of our groups get off the reservation when they publicly criticize the two services on isolated incidents and events. This is a bad thing when carried to extremes. Eventually, it will give the public the impression these areas aren't being managed properly, and you know and I know that is not the case. I must say, we should discuss these things in a temperate manner with our officials where all the channels are open to do so.

"There's something else I want to say," Miss James continued. "I've said I think the foresters are remarkable, and I think the same thing is true of The American Forestry Association. You know, when our group was formed the leaders wanted it to 'do the same thing for parks The American Forestry Association had done for forests.' Then too, Henry A. Barker, of Providence, was chairman of our forestry committee, and he worked hard on the Clarke-McNary legislation. And The American Forestry Association has gone right on, and I must say your Tucson meeting was the best organized convention I've ever attended anywhere, and your magazine AMERICAN FORESTS has become something we can all use and do use.

"Also, I would like to say I think the Forest Service has done a good job with its recreation program on the Coronado National Forest which we visited at your meeting. It is well

laid out and planned. Why? Well, I liked the way the picnic and camping areas are laid out to afford maximum privacy for individual groups and families. Believe me, that takes planning. Of course, I do believe that by making a late start the Forest Service has capitalized on the earlier mistakes we made in park planning. But that's neither here nor there. They are in recreation now to the hilt, and we're thankful they are. And I have great admiration for John Sieker (in charge of recreational planning for the service)."

Recently some of the wilderness groups have been using the term "buffer zones," we told Miss James. Apparently it means a sort of cushion to be formed on the peripheries of parks. What was her thinking on that, we inquired?

"I'd want to study that," Miss James replied. "It sounds like something Russia would propose in Central Europe, doesn't it? Yes, I'd want to study that and I really don't know what it means. But it does sound sort of tricky to me."

What is her opinion on the present crop of presidential aspirants in terms of their views on conservation, we asked?

"I have never joined either political party," she replied. "I judge members of Congress and the executive officers of the government by their views and actions on conservation, planning, and parks. And I must say we have found a great many friends. I must say AMERICAN FORESTS might well undertake in future months a series of objective interviews on the conservation views of all the presidential hopefuls in both parties. That would be much more rewarding and useful than interviewing people like me. We ought to know what those people believe."

These, then, are some of the views of the tall, grave lady with the warm smile who has become a familiar figure at AFA annual meetings over a number of decades. She believes that the planner is coming into his own and that the foresters and the wild-lifers and conservationists generally are now meeting them on common ground. That she is right would appear to be borne out by Laurance Rockefeller's recent statement in New York when he said that recreational problems at the community level are one of the major challenges to his National Outdoor Recreation Resources Review Commission.

To which Miss James adds, "He's right, and I must say that young man has got his work cut out for him."

Swedish Foresters Tools

- Increment Borers
- Tree Calipers
- Bark Measurers
- Compasses

Precision made in Mora, Sweden for accuracy and durability. Send for your free copy of our Foresters' Tool Catalogue. Write Dept. F

Sandvik STEEL, INC.

SAW & TOOL DIVISION
1702 Nevins Rd., Fair Lawn, N. J.



Reading About Resources

(From page 27)

tribution in this field. The almost-fifty stories are drawn from past issues of the *Audubon Magazine*, of which Mr. Terres is the able editor. Each one is attested by Mr. Terres to be true.

Writing in the introduction, he observes that "If some of these stories . . . will make readers feel a little closer to some of our native wild things, then this book will have done its greatest service." And that will unquestionably be a result of this book's popularity for many years to come.

Alan Devoe's "The World of a Chipmunk" and "Mrs. Spheer" by Edith McLeod are two stories that I found especially pleasing. "Jeff" by Alexander Sprunt, Jr., is a fine piece of work, as is "Pelican Portraits" by Percy L. DePuy. But each of these four-dozen stories will have its own enthusiasts, and each will deserve them. This is an area in which subjective judgment is supreme. There is something in this book for every taste, and something in every story that deserves a good word.

The mention of "word" turns our attention to a fascinating study of the language of forestry, a study of the words and phrases which gave early logging camps such character and color. *Woods Words* by Dean Walter F. McCulloch of the School of Forestry, Oregon State College (Oregon Historical Society, 1958, \$7.50), is an exhaustive "Comprehensive Dictionary of Loggers' Terms."

The book is handsomely bound, and illustrated with a superb reproduction of a primitive painting by an unknown logger, a "documentary" picture of early western logging. Unfortunately, the text is miserably printed. The selection of the type face is the most unhappy I have come across in years.

But what a wealth of insight into the spirit and substance of American forestry! I learned that a "fern hopper" is a graduate in forestry from Oregon State College and that, in this field, a "feather merchant" is a small logger! Also, I discover that "Lulu" is "A character in a well-known bunkhouse song which cannot be sung in public." Unfortunately it seems that this melodic piece of native culture cannot be printed in public, either.

There are some books a man doesn't know quite what to do with, where they belong, where their niche is. *Woods Words*, however, brings

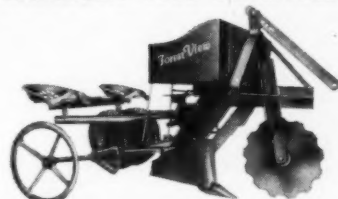
to mind a specific use. I would like to urge that something be done to suggest to a relative of every forestry student in the United States that this book be bought and presented to him upon his graduation. It is not to take the place of the convertible he wants, or of the \$1000 check to back-stop him on his first job. But *Woods Words* will do something for every forestry graduate that neither convertible nor check could do: give him a real and lasting "feel" for the strong lore of his new profession.

This book would be more important on his desk than a conventional dictionary. Better to misspell a word here and there, than never to know these words of the vivid language of the loggers!

Moving now from romance to reality, the arrival of the third edition of the excellent P. P. Pirone book, *Tree Maintenance*, is good news. Published in 1941 as *Maintenance of Shade and Ornamental Trees*, it has done more for the trees in our lives than a dozen committees or two dozen resolutions. The Oxford University Press (1959, \$10.00) has done a beautiful job of making this book both attractive and useful.



A FORESTVIEW TANDEM Tree PLANTER



- Rugged, commercial steel construction throughout
- Correct planting depth on any terrain
- Plants seedlings, liners, potted material, etc. without damage

Forestview's Tandem Planter gives you the most in exclusive "custom-built" advantages at regular prices. With Forestview you get accurate alignment with adjustable lever . . . timing wheel that spaces plants evenly . . . scalloped coupler for easy cutting of briars, roots, etc. . . special trencher shoe with slip-fit point . . . non-clogging stripper-bar . . . and many others. Investigate the savings you can make with a Forestview Planter.

Write Today For Literature and Prices—FREE
Dealer Inquiries Invited

**Forest View
EVERGREEN NURSERY**
DEPT. AF GERMANIA, PENNA.

WIDE RANGE of Portable PUMPERS

Pacific Marine has a complete line of all types of forest fire fighting equipment. A full line of precision pumpers, from a low cost light weight (39 lbs.) portable unit, to heavy-duty, slip-on truck mounted pumpers.

Easy to Operate Thoroughly Dependable

The Pacific Marine line has been produced by over 35 years of co-operative work with the experienced, thoughtful leaders of the Forest Service.

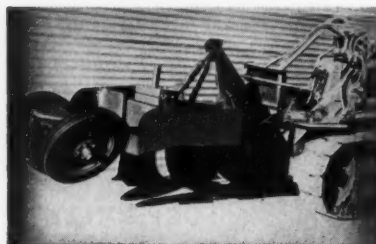
Warehouse Stocks near you
Complete stocks of pumpers, hose, and other essential accessories are maintained in distributors warehouses throughout the nation. Write for name of nearest distributor, catalog and price list.



Illustration shows streams from Type BE, low cost, portable (180 p.s.i., 8 gals. per min.) and Type Y (225 p.s.i., 20 gals. per min.)

PACIFIC MARINE SUPPLY COMPANY

FIRE EQUIPMENT DIVISION
SEATTLE 1, WASHINGTON



SCM MODEL TREE PLANTER

Available for D2, T6, TD6, 40C 420C.

Our five distinctly different models are designed for deep penetration and high survival in all soil conditions and terrain.

No distorted roots when Lowther machines are used.

For Details write:

HARRY A. LOWTHER COMPANY

P. O. Box 1412

JOLIET, ILL.

SILVA COMPASS

Simpler — More Accurate

Recommended by foresters for cruising. Easier to use, faster, positive. Direct course readings. Write for free literature and instructions.

SILVA, INC., Dept. A, La Porte, Ind.



BARBER MODEL

Resource Management: A Base for Freedom

(From page 16)

As a matter of fact, only a small part of our nation's timber land is in public ownership, much of it in areas remote from markets and either low in productivity or inaccessible. Private enterprise has demonstrated that many forests can be managed at a profit on a sustained yield basis when laws are adjusted to the long-term nature of forestry, and public responsibility for fire, disease, and insect control is recognized. Surely such responsibility is plain enough when we take into account the public benefits conferred by all forests in the way of watershed and flood control, wildlife propagation, recreation, and the like. I have in mind here especially the 3,400,000 farmers owning small woodlands totalling some 165,000,000 acres, which are by and large the least productive of all our forest lands but which have enormous potential for growth. It is certainly in the public interest that these lands be rejuvenated.

The Forest Service, I am glad to report, is acutely aware of the plight of these small ownerships. Their condition was dramatically highlighted in its most recent report on our forest situation, entitled "Timber Resources for America's Future." That report is a milestone in our progress toward true management of our national resources, accurately portraying our present situation and

projecting potential productivity against future needs of our swiftly multiplying population. I cannot go into detail here, but the picture it portrays is a grimly disturbing and challenging one. In a nutshell, it tells us that, while we will continue to have a lot of trees, their character and quality will be far different from what we have enjoyed so far. Unless, that is, we start right now to do the things needed to correct that picture—start to manage this resource as it ought to be managed. And one of the most important places to begin is on these farms and other small ownerships.

If I have dealt here in some detail with but one of our natural resources, forests, it is only because I have become rather intimately acquainted with that resource during these past three decades or thereabouts. I realize fully, however, that forests are a highly unusual type of resource in that they are renewable. You cannot say the same for iron mines or oil wells; once they are emptied, we've had it!

There is something terrifyingly final about the exhaustion of a mine. I have had a little personal experience with it in the Mesabi country of Minnesota, where a special state commission is hard at work finding ways to develop other resources now that the jobs and businesses dependent on these once fabulously and seemingly inexhaustibly rich mines are disappearing with the ore. Only last year I sat in on a panel meeting called to explore alternate possibilities for industrial development.

It was a heartening experience, because for one thing it typified democratic forces in action—politicians, businessmen, workers, educators, scientists working together on a common problem. There was a sense of urgency about that meeting that bespoke sincere attention on the part of its participants, most of whom were local people familiar with the background and causes of the developing crisis. These people were in dead earnest, and I could not help but feel that they too were pioneering, working as free men toward a goal; and that what they did here could have much broader implications for the solution of many similar problems of resource management elsewhere in our land. They were applying all the tools at their command to do a job.

MOUNTAIN VACATION

For You, Your Family

Crestmont Inn calls you to a light-hearted vacation in the Alleghenies. Swim, boat or canoe in the lake. Play tennis, golf (there's a new pitch & putt course), shuffleboard. With picnic lunch, explore woodland trails on foot or horseback. Read or paint in a quiet nook. Or just relax on one of the cool, wide porches and look out over fifty miles of placidly-beautiful hills and valleys.

Enjoy concerts, dances, lectures planned for your pleasure. Golf and tennis pros available for your instruction. Tot and teen-age directors keep youngsters happily occupied.

Choose a pleasant room or one of the new ranch-type cottages. Savor delicious meals in the lakeview dining room.

Congenial people, prompt service, an atmosphere of restfulness—all make your vacation at Crestmont Inn a refreshing, long-remembered holiday!

Opening June 15—Write for Folder
CRESTMONT INN, Eagles Mere, Pa.

W. T. Dickerson, President



Those who wish it were so say that democracies are inefficient. I suppose that is because the slow, deliberate, almost hesitant way in which our democracy sometimes functions may look inefficient to some when contrasted with the crisp, unquestioned orders for action that characterize more dictatorial forms of government. But do rapid action and unquestioning obedience necessarily come out equal to efficient action over the long pull? Quick, dictatorial decisions, history teaches us, have a habit of leading to quick national catastrophe. Dictators cannot afford to make mistakes—and what dictator ever avoided making them?

Oh, dictatorships can get things done, all right. They can band the peasantry together into communes to increase agricultural production; they can set up five-year plans to boost industrial output; they can organize the population into units for this and that, and create whiplash slogans and production goals to stimulate effort along selected avenues of action. They can even set up such targets as that embodied in Soviet Russia's most recent national rallying cry: "Even America must be surpassed!"

Surpassed in what way? In production of armaments, in development of satellites, in Olympic prowess of athletes, in exploitation of resources? Or even, at some remote future date, in consumption of consumer goods?

While I doubt it very much, it is at least debatable that the Soviets could conceivably surpass us in all those ways. We must not let it happen, though, and I do not believe we will. But the crux of the matter is not there. The crux lies in the one thing to which that rallying cry most certainly does not apply: the freedom of the individual to act and think and speak out in a free society. There is the one thing in which dictators have no intention whatever of surpassing us! And it is the one thing which we cherish above all else; the one thing for which we will, if necessary, sacrifice all else.

Yet, though we cherish our freedom above all, we cannot expect to retain it if we shirk the responsibilities that go hand in hand with it. One of the greatest of these responsibilities is that of sustaining our natural resources. It may be true, although it is yet to be demonstrated, that a nation can have great material wealth without individual freedom. But it is certainly true, as our national history has amply demonstrated, that freedom germinates and

flowers best where natural resources are ample.

It follows, then, that free men must guard, protect, and husband the resources of their land, even as the wise farmer fertilizes and prevents erosion and otherwise husbands his fields. And this must be done within the framework of democracy if freedom is to survive.

Along these lines, we have a tremendous job ahead of us. In one of those imposing government buildings that grace our national capital there is a clock that measures the time we have to do this job in a strikingly arresting way. This clock tells us at any given moment how many men, women, and children breathe our free air. At 11 A.M. on October 16, 1958, that clock registered an even 175,000,000 people, some 23,500,000 more than eight years earlier at the start of our present decade.

At the rate this clock is measuring time in terms of human beings to feed and clothe, house and build schools and find jobs for, we will need natural resources for twice as many when the next century begins as we did in 1950—an estimated 335 million. In the face of such a population explosion during the next 41 years, can anyone deny that the time is short? The mere physical impact of so many people upon our living space will create severe strains and stresses. A population twice that of 1950 will automatically reduce the cropland available per person to about one-half its present acreage.



**SAVE ABOUT $\frac{1}{3}$
FACTORY TO YOU!**

ORDER BY MAIL

Eddie BAUER

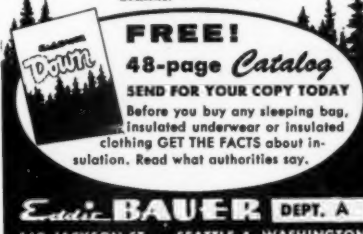
World's Finest Sleeping Bags

PROVEN!

Rated the finest by expedition leaders, guides, mountaineers, foresters, authorities everywhere. **READ WHAT OTHERS SAY.** Made exclusively in our own factory under U. S. Patents. Sold direct to you only—never through dealers . . . never under other brands.

COMPARE!

Order Without Risk any Eddie BAUER sleeping bags—singles, twin sets, mummies, station wagon bags. Compare with others of similar quality. If you do not agree you save about $\frac{1}{3}$ and that ours are finer in every way, return for prompt full refund . . . including shipping costs both ways.



FREE!

48-page Catalog

SEND FOR YOUR COPY TODAY

Before you buy any sleeping bag, insulated underwear or insulated clothing GET THE FACTS about insulation. Read what authorities say.

Eddie BAUER DEPT. A

160 JACKSON ST. • SEATTLE 4, WASHINGTON



Smokey's Commandments

**BREAK MATCHES
CRUSH SMOKES
BE SURE ALL
FIRES ARE OUT!**

**Remember—
Only you can**

PREVENT FOREST FIRES!

THE QUAKER OATS COMPANY, CHICAGO 54

BARTLETT MEYLAN SAW

CUTS PRUNING TIME UP TO 25%!

The M-414 is especially designed for pruning lower branches on pine and spruce. It enables a man of average height to prune 9½ ft. above ground without a ladder, saving up to 25 per cent in time. Curved 16-in. blade made of special grade heavy tool steel with 7 teeth per inch. Specially tapered 36-in. handle lessens fatigue.

M-414, 16" blade, \$12.00

M-414, 18" blade, \$12.50

Delivered in U.S.A.

BARTLETT TREE PAINT



for treating all pruning wounds. Pure Egyptian black asphalt base protects against fungi. Will not crack, blister or freeze.

One 1-gal. can \$5.50

Six 1-gal. cans, \$33.50 per gal.

Two 5-gal. drums, \$10.00 per drum.

One 5-gal. drum, \$15.00.

Prices delivered U.S.A.

No C.O.D.'s Please

Write for new catalog showing all Bartlett tools and supplies.

BARTLETT MFG. CO.

3019 E. Grand Blvd. Detroit 2, Mich.

New highways, factories, homes, and other land requirements will further curtail our farm land, so that the mere problem of growing enough food will put tremendous new demands upon the productivity of the remaining acres.

It has been our ability to produce goods with the tools of this machine-age democracy that has set off this explosion of human beings. Our success in managing our resources will be the measure of our ability to pass on to our children the freedoms we enjoy, the freedoms that alone make man truly dignified and democratic.

We must work out ways to conserve and restore and expand our resources. To do so calls for honest evaluations and vigorous action. We must appraise our forests, our soil, our water, our minerals, determine what needs to be done to restore and make them more useful, and then do it, democratically and responsibly, with all the tools at our command.

In these postwar years we have attained an unprecedented level of prosperity and wealth. We can afford to do the necessary reconstruction, because it is in reality a reinvestment of some of the riches we have taken out of the land; a reinvestment that will pay the finest sort of dividends. It is, and should be, a part of the cost of doing business.

If I may refer once again to the forest industries, I would like to illustrate my meaning with an example. Here in Wisconsin we have long been conscious of stream pollution by papermill effluent. For a long time it didn't worry us too much because we had lots of water, but in recent years we are doing something about it. In many parts of the West, however, water is a far more precious resource. A few years ago I spoke to a group interested in launching a western pulp and paper enterprise.

I told them bluntly that I thought they could build their mill and sell their product, but they would have to include in the cost of business some way of disposing of effluent other than dumping it into a nearby stream, because the people in that thirsty country would not tolerate such pollution.

And while we are on that subject of water, let me drive home one other point about honesty of purpose and goals. Let's not kid ourselves that, when we restore a polluted stream to something of its original purity, we are "improving" it. That stream flowed fresh and clear long before we came along and dumped industrial wastes and sewage into it. Remembering the words of Ezekiel, let us be ever conscious that what we are in reality doing is cleaning up the messes of our own making, and there are many.

It's all a part of this job of restoring and revitalizing our natural resources.

We have the tools and the techniques, but where they are yet inadequate for the job, we have the intellect, the knowledge, the laboratories, and the productive capacity to make what we need.

But above all, let us do the job within the framework of this society of ours that is governed by law, not by dictum or fiat. Ours is an amazingly adaptable system because it guides rather than commands. We have a government that fixes rules determining conditions under which available resources may be used, leaving to us as free men the decisions concerning the purposes for which they are to be used. We can do the necessary things to keep it that way, or we can trade it for some system of collectivism that will prescribe not only the conditions for use, but what those uses shall be. Then our economic freedom will be lost, and with it the rest of our freedoms. For they are all in reality only aspects of the same thing.

It is not merely a question of whether our descendants will have enough food or fuel or clothing to exist. To get back to such elements is to return, in a sense, to the law of the jungle, to the process of natural selection, to the rule of the strong man and subservience to centralized power. We will be able to grow tremendous amounts of life-sustaining food; but instead of the 150 pounds of meat each American now consumes a year, it will be a monotonous diet of cereals ominously like that of Asia's billions today.

PLANTING ? TREES ?

Use a "FORESTER" or "CONSERVATOR" Planter



Complete information on request

UTILITY TOOL & BODY CO.

Clintonville, Wis.

START YOUR OWN TREE FARM

McCurdy Bros. Seedlings Have Built-In Growability that Provides Profits.

MID-WEST'S LARGEST PINE TREE NURSERIES

40 Million Highest Quality and Most Reasonably Priced Seedlings on the Market for Spring Planting.

TREE FARMS FOR SALE—Write Dept. B Manton, Mich., for full information.

McCurdy Bros. Nurseries

Gordon McCurdy with 2-year-old Scots pine seedlings.



Within the framework of our rule of law, we must learn to act more in concert, combining all our various talents and tools for the greater good of all. Without sacrificing one whit of our individual freedoms unnecessarily, we must find means of working more closely together toward the same goals. We have been groping toward such forms of concerted action ever since we became a nation—through our Congress, our political parties, our courts and juries, our legislatures and regulatory commissions; through private groups with common interests, such as manufacturers' associations, labor unions, 4-H clubs, farm co-ops, professional and fraternal and religious organizations—yes, even athletic teams and social clubs!

From all this experience surely we can discover ways of working together democratically much more

effectively than we thus far have, to solve this enormously complex problem of conserving our natural resources. The clues to more intelligent action are plain enough to see if we but stop to examine them.

I think Teddy Roosevelt put it to us quite plainly in his words, now emblazoned in the lobby of the Forest Products Laboratory, "by wise use. . . ." If we act on those words wherever raw materials are concerned, as producers, distributors, consumers, and free citizens, we can achieve miracles in this job of managing our resources.

And the meaning implicit in such symbols of our independence and proud past as the Washington Monument, the halls of Congress, the Statue of Liberty—yes, even my old Indiana haunt, Cox Woods—will continue fresh and clear for the coming generations.

The Crisis in Outdoor Recreation

(From page 35)

continuous zone of heavy settlement, which already has been referred to as a megalopolis. There will be other great concentrations around the Great Lakes and along the Gulf and Pacific Coasts. In a word, the contrasts on the population map of 2000 will look much like those for 1950, only more so.

More city, county, and state areas in the urbanized regions will not only meet increases in the present pattern of demand, but will also offer attractive alternatives to families who otherwise would have no choice but to strike out for more distant, resource-based recreation lands. More of such user-oriented and intermediate areas in the West will provide, perhaps even better than today, for thousands of families who use federal lands because no others are available.

There will be more and more situations in which development of local and intermediate recreation areas will be more urgently required in the long-range, nationwide interest than in the immediate direct interest of a particular city, county, or state. If we are to keep up with growing recreation demand, there must be better ways of keeping the whole picture before even the most localized agencies and for encouraging local actions that will contribute to countrywide improvement.

Another great advantage of a comprehensive approach would come in the complicated area of fee setting. This is bound to be a live issue in

any case, for any serious effort to keep up with demand for outdoor recreation is going to cost a lot of money—perhaps \$50 billion or more just for buying and improving land between now and the year 2000, at the land-cost and required-acreage rates on user-oriented and intermediate land suggested earlier in this article. Most of the money will probably continue to come from local, state, and federal taxes; the rest—very likely an increasing proportion—will come from direct charges on users of recreation land and facilities. The basic problem is to reconcile two widely-held principles that often clash in application: That equal recreation opportunity for all is a public responsibility and that direct beneficiaries should pay for services rendered. This issue is already familiar, and there is no use in going into it here. The sense of public responsibility will keep a ceiling on fees, though there may be some hot arguments over just where a particular ceiling ought to be.

The chance to do something new will lie in using the scale of charges to promote more effective use of all outdoor recreation areas. This would mean setting fees with an eye to their general effects on recreation as well as on the particular area and agency involved. For instance, the fees for using most of the top-grade, resource-based areas might be considerably higher than they are today

A BETTER PUMP BY FEDCO



Built to U. S.
Forest Service
Specifications

SMOKECHASER OUTFIT MODEL N

- 1 Comfortable, easy pack, it "fits"
Shoulder straps will not rope or twist
- 2 Maximum water capacity—5 gallons
Minimum weight—dry 4½ lbs. Service weight 46 lbs.
- 3 Strong, corrosive resistant bag
Neoprene rubber coated nylon fabric
- 4 40" hose and ball bearing hose connectors interchangeable with FS model
- 5 Standard Fedco pump with positive shut-off interchangeable with FS model

A FEDCO EXCLUSIVE

Fedco Smokechaser outfits can be filled from a small remote water seepage using the standard Fedco pump at the rate of one gal. per min.



Details of the Smokechaser on request
DEALER INQUIRIES INVITED

FIRE EQUIPMENT DEVELOPMENT CO.

829 Estabrook St., San Leandro, California

Distributed in Canada by

CANUS EQUIPMENT LTD., OTTAWA, ONTARIO

TREES FOR SALE

American Arborvitae, Balsam Fir, Engelmann Blue Spruce, White Pine, Scotch Pine, Norway Spruce, White Spruce, etc. Prices reasonable and trees are GUARANTEED TO LIVE. Write for FREE illustrated folder. WESTERN MAINE FOREST NURSERY COMPANY
Dept. F Fryeburg, Maine

TREES FOR FOREST PLANTING PINE • SPRUCE

Firs, Arborvitae and Other Conifers. We raise all our trees in our own nurseries.
KEENE FORESTRY ASSOCIATION
KEENE, NEW HAMPSHIRE

SEEDS TREE.. SHRUB

E. C. MORAN
Stanford, Montana

CHRISTMAS TREES

Turn wasteland into profit. Our famous Christmas Tree Growers' Guide tells you how. Write for free copy.

OR FOREST TREES

FREE Catalog

MUSSER FORESTS, Box 27-D Indiana: Pa.

EVERGREEN LINING-OUT STOCK

Growers of Pine, Spruce, Fir, Hemlock, etc. Seedlings and Transplants.

FREE WHOLESALE PRICE LIST

SUNCREST NURSERIES

Box 305-E Homer City, Penna.

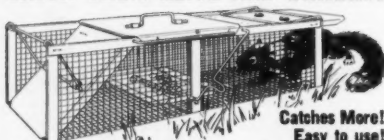
PRENTISS & CARLISLE CO., INC.

Complete Timber Services

Estimates—Appraisals—Management

107 Court Street Bangor, Maine

CATCH THEM ALIVE AND UNHURT!



Catches More!
Easy to use!

Amazing HAVAHART trap captures raiding rats, rabbits, squirrels, skunks, weasels, etc. Takes mink, coons without injury. Straying pets, poultry released unharmed. Open ends give animal confidence. Fully guaranteed. No jaws or springs to break. Rustproof. Sizes for all needs. Send for booklet on trapping secrets illustrated by Carl Burger. HAVAHART, 155-P Water Street, Ossining, N.Y.
Please send me FREE new 40-page booklet and price list.
Name _____
Address _____

—an average of around \$25.00, say, instead of around \$3.00. This would reduce the number of casual visits and leave room for more people with a deep love of camping or sightseeing in remote areas. The more casual vacationists would be diverted to intermediate or user-oriented lands where fees were lower. Similar distinctions might be drawn between county and state facilities. Another reason for giving more attention to the relation between the charges in different places is the increasing mobility that will come from more cars and better roads. Many of the larger county and state parks are serving more and more people from outside their political boundaries. The only way to share the burden equitably (unless a state or county deliberately sets out to

capture tourist trade) is to get back more of the costs from the users.

The comprehensive approach to outdoor recreation cannot, as we have already noted, be imposed from the top down. It will have to come from voluntary co-operation of all levels of government and private groups. The most promising forward step in many years was the establishment of The National Outdoor Recreation Resources Review Commission. Although even its broad charter for studies and recommendations excludes city recreation facilities, it includes all the others, a breadth of scope that represents a long step forward. Even more important, its operations and its report may offer suggestions for continued planning on a comprehensive scale.

PHOTOGRAPH CREDITS FOR “CRISIS IN OUTDOOR RECREATION”

P. 28, left, Yosemite Falls, Ralph H. Anderson, National Park Service; right, Glacier National Park, George A. Grant, National Park Service; P. 29, National Park Service; P. 30, top left, American Forest Products Industries; top right, Department of Recreation, New York City; bottom, National Recreation Association; P. 31, all photographs, Board of Park Commissioners, Fort Wayne, Ind.; P. 32, Pennsylvania Forestry Association; P. 33, Department of Public Relations, Frankfort, Kentucky; P. 34, all photographs, Metropolitan Park District of Tacoma, Washington; P. 35, bottom, National Park Service.

A Children's Forest

(From page 17)

country child quite naturally learns from its environment, the city child of necessity must be taught indirectly, and to a great extent by teachers themselves the product of much the same environment.

Occasional school trips to zoo or park on which some children are taken of course serve to bring them closer to nature. One example of the bug-eyed wonder displayed by children and adults alike may be seen at the live-bird lectures here in Washington Crossing State Park. But by and large the city child is only occasionally exposed to such experience and is denied the full communion with a more natural environment he so badly needs to broaden his understanding as a future adult.

With the great majority reared in so limited an environment, is there any wonder that progress in conservation is so slow? Is exposing a child to a mere picture of a tree, its leaf, or its bark, enough? And does this not call for some more effective means through which the child could be brought into greater contact with a more natural world?

What, instead, could happen if a boy were given the experience of planting his own tree and were then to watch it grow along with himself? To the child never before so exposed, would this not mean a much greater experience than a classroom lecture or even a ride through the country, the nature of which he can barely grasp?

With Washington Crossing Park's growing facilities as an educator in American history and the natural sciences, should we not therefore also plan for a Children's Forest, where each child can plant his own tree, which he can tag with his own name, and which he can visit to observe with his own eyes which grows faster, the tree or the boy?

Let us visualize what this might look like. Having, for obvious reasons, already requested the incoming legislature for an appropriation for land acquisition, we could, with the cooperation of the Governor and the Secretary of Forests and Waters reserve some of the newly acquired acreage for a Children's Forest.

A logical location would be contiguous to the Delaware Canal, which bisects the park. This, when necessary, would make it possible to irrigate the new plantings, for a better start. It could also make possible the creation of a lagoon and a central area primarily devoted to children's interests and around which the new trees could be planted by them in a prearranged pattern.

During spring and fall, the schools could bring their children for tree-planting expeditions in the park. Through prior arrangements, a specific area could be assigned to each group. The seedlings could come from the already extensive state nurseries and be held in reserve for the purpose.

A competent park staff could provide the required supervision and instruction. The necessary tools could be available. A stenciling machine, using a metal strip, could emboss the child's name from a list supplied in advance. And Johnny and Mary could each have the privilege of attaching his own name tag to his "own" tree, amidst the sounds of an appropriate story, poem or song.

From then on, many parents, themselves perhaps never before exposed to such an experience, would be faced with pressure from their own offspring to bring them back to the park to visit their trees. Through means aimed so directly at the child's consciousness, an impression of this sort may serve as a springboard to kindle a life-long interest in conservation.

Thanks to a conservation-minded administration, we have a commission devoted to making Washington Crossing State Park an ever-growing educational institution. The great turning point in the American Revolution which the park so well commemorates cannot be duplicated elsewhere. But its Wild Flower Preserve, its Bird Conservation Program and a Children's Forest can. Once it is initiated at Washington Crossing State Park, with 1,200,000 visitors annually, persons imbued with its importance may try to plan similar Children's Forests in their own state, county or community, to the lasting growth of conservation as a keystone of America's future.

If a less wealthy—but much wiser—country like Norway can interest its school children in spending the last day of their school year planting millions of trees, that they may grow up together, why should not America's youngsters be given a similar opportunity?

Fifty years ago, the founders of the conservation movement proclaimed at the White House: "To skin and exhaust the earth is to undermine the days of our children." Today, if we follow in the devoted footsteps of those before us, the Children's Forest may be a greater means to help kindle a truly popular interest conservation so badly needs. Down at the grassroots, as the boy, the girl, and their trees grow up together, we can, year after year, *grow* ever so many more conservationists to help rebuild their own land.

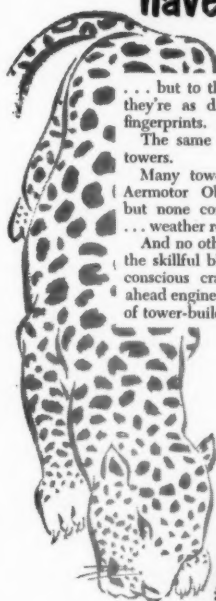
Foresters in Washington

Livelier monthly meetings, instigation of action programs, and the growing number of foresters in the nation's capital are the principal reasons given by Kenneth B. Pomeroy, chairman, and Charles H. Stoddard, vice chairman, for the growing success of the Washington Section of the Society of American Foresters.

A total of 170 foresters attended the section's first all-day meeting February 19. Topics covered included use of chemicals in forest management, the trend in forest inventory systems, the stature of the forestry profession in the United States, and current problems in government-forest industry relations in the East.

At least part of the success of the first all-day meeting was due to the importation of "outsiders" who brought fresh points of view to the section, according to Howard A. Post, program chairman. These visitors included Dr. James DeWitt, chief, Biochemical Research Division, Fish and Wildlife Service; Calvin B. Stott; Arthur W. Nelson, general manager, The Timber Products Division, Champion Paper and Fibre Company, Hamilton, Ohio; Zebulon T. White, Yale School of Forestry; N. T. Barren, chief forester, Union Bag-Camp Paper Company, Franklin, Virginia; D. E. Hess, general manager, Glatfelter Pulp Wood Company, Gettysburg, Pa.; Edward Stuart, Jr., consulting forester, Hampton, Virginia; Roy Olson, assistant regional forester, Forest Service, Philadelphia; and H. C. Buckingham, state forester, Maryland.

All leopards have spots



... but to the experienced eye they're as different as human fingerprints.

The same thing is true with towers.

Many towers may look like Aermotor Observation Towers but none compare in strength ... weather resistance ... value!

And no other tower can boast the skillful blending of quality-conscious craftsmanship—years-ahead engineering—and 70 years of tower-building experience.

AERMOTOR COMPANY

2500 W. Roosevelt Road, Chicago 8, Illinois, U.S.A.

LEETONIA SUPERIOR SERVICE TOOLS

Special Quality Steel
—Packaged

to save handling and storage costs. Finishes to create eye appeal at point of sale. When ordering from your favorite distributor be sure to specify Leetonia Brand. The Tools that are the acme of perfection and give satisfactory service and bring repeat orders. Catalog of Hardware and Marine Tools, also Mine Drills and Tools, one or both upon request.

THE LEETONIA TOOL CO.

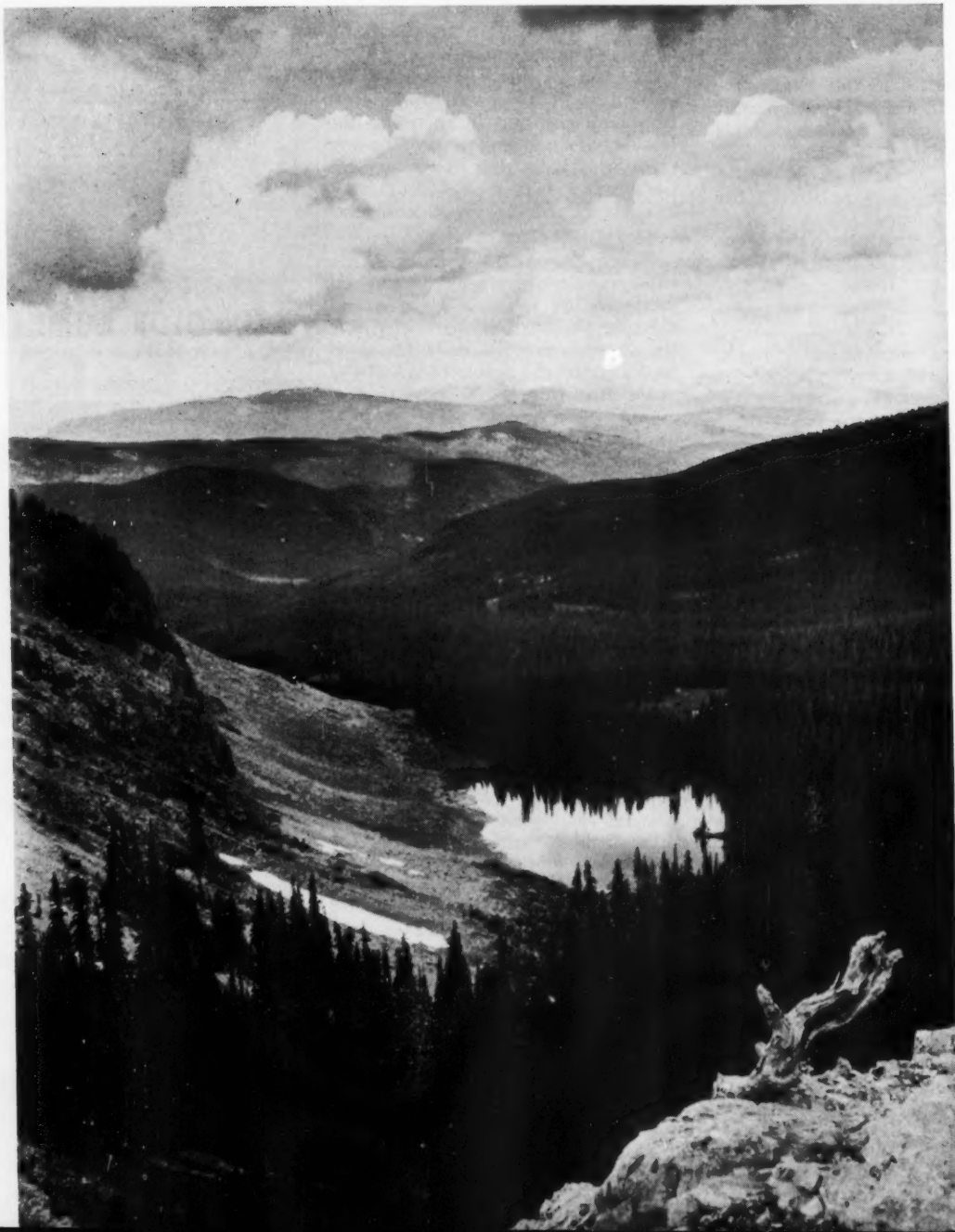
LEETONIA, OHIO, U.S.A.

Feature Photo of the Month

Photos used on this page will be of unusual rather than esthetic qualities and subject matter will be restricted to scenes, events, objects or persons related to the use, enjoyment or unique aspects of our renewable natural resources. For each picture selected, AMERICAN FORESTS will pay \$10

Crystal Lake and Crystal Creek as viewed from timberline on Fossil Ridge in the Gunnison National Forest, Colorado. The Elk Mountains appear in the distance.

Photo by John Allen, Gunnison, Colorado





EXTRA LUGGING POWER NEW HOMELITE



The new Homelite 7-21C provides all of the extra lugging power you need for felling the big ones! Using a gear ratio of 2.84 to 1, it cuts through 20" trees in 18 seconds, fells trees up to 7 feet in diameter.

Its balanced 21 pounds* means easier, safer handling in any location, any cutting position. Big fuel tank gives you more cutting time between refuelings. And the Homelite 7-21C has all of the famous Homelite Magic 7 features: tough, drop-forged, counterbalanced crankshaft — famous Homelite high

compression, short stroke engine design — large air filter — automatic clutch — revolutionary intake valve — simple piston pump oiling with finger-tip controls — automatic governor.

Available with a full line of attachments including plunge cut bow, brush cutter and clearing bar.

Team up for profit with a new Homelite 7-21C. Have a free demonstration at your nearby Homelite dealer's.

*less bar and chain



Gear Drive
21 Pounds
Guaranteed for 7 months
Straight blades from
14" to 60"
Plunge cut bow 16"



HOMELITE

A DIVISION OF TEXTRON INC.

4204 RIVERDALE AVENUE, PORT CHESTER, NEW YORK

In Canada: Terry Machinery Co., Ltd.

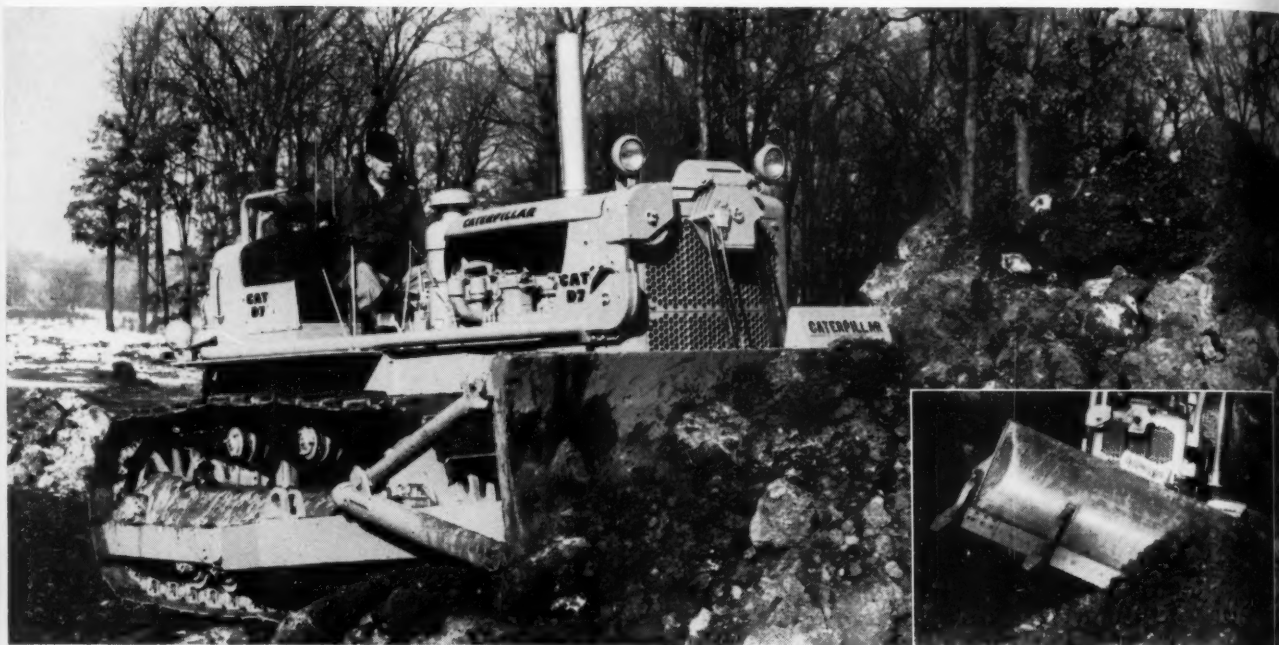
ANOTHER FIRST! All new Homelite bars and bow guides guaranteed for a full 60 days! Straight blades: Hard Track plus Extra Hard Tip. Bow guides: Extra Hard Surface all the way around!



PROJECT PAYDIRT* *pays off again*

NEW CAT D7 SERIES D TRACTOR

For higher production in the woods!



THE new Cat D7 Series D Tractor is champ, the top woods tractor in its class. It packs more power and more lugging ability than ever before—and now delivers more production at lower operating and maintenance costs. The payoff for you . . . increased performance that no other tractor in this power range can match.

Major improvements, developed by Caterpillar's Project Paydirt, affect the engine, power train and undercarriage. And the new Series D retains the exclusive Caterpillar oil clutch. The clutch is time-tested; delivers up to 2,000 hours—one whole season—without so much as an adjustment.

Also available is the versatile No. 7G Bulldozer (inset). It 'dozes and rips. It's ideal for logging work—ideal for high-speed clearing of stones, boulders, brush and trees. The blade has four teeth, and it can be tilted or tipped without the operator leaving the seat.

For complete facts about the new D7 Series D, see your Caterpillar Dealer. Ask him for a demonstration.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

*** PROJECT PAYDIRT:** Caterpillar's multimillion-dollar research and development program—to meet the continuing challenge of the greatest construction era in history with the most productive machines ever developed.

NEW ON THE D7 SERIES D

TURBOCHARGED ENGINE with 9% horsepower increase and 80% more tractor lugging ability. In-seat starting is available. The payoff . . . more production.

DRY-TYPE AIR CLEANER removes at least 99.8% of all dirt and dust from engine intake air, at all times, under any conditions. Cleaner can be easily serviced in 5 minutes. Filter can be re-used. The payoff . . . economical, convenient maintenance and longer engine life.

SERVICE-FREE TRACK ROLLERS, carrier rollers and idlers are lifetime lubricated. New load-carrying design increases roller life. The payoff . . . longer life, no on-the-job lubrication shut-downs.

PRESSURE-LUBRICATED POWER TRAIN insures complete circulation of filtered oil to transmission, bevel gear and pinion. To transmit increased power, power train components have greater strength. The payoff . . . trouble-free gear operation.

CATERPILLAR

Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

**BORN OF RESEARCH
PROVED IN THE FIELD**

